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DETACHMENT OF THE RETINA FROM THE CHOROID COAT OF THE EYE IN THE HORSE.

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As far as is known, this accident has not been recorded in English professional literature, although there is reason to suppose that it is more common than it is generally thought to be, especially if it is considered how liable animals are to blows and injuries that would cause effusion between the two membranes, and also how easily they can be separated from each other.

The case in question—a pony, the property of an officer—was admitted to the hospital of the Lahore Veterinary College on January 5th, 1892. The owner stated that about a fortnight or ten days previously, the animal had received a blow on the left eye, but thinking the matter was only trifling, or, as he expressed it, "that the pony had a cold in the eye," he did nothing but apply cold water to it. On admission the left cornea was found to be opaque on its upper and outer half, with well-marked pannus. There being intense photophobia, it was impossible to examine the eye for some days until this symptom had abated. It was then seen that there was wide dilatation of the pupil, with insensibility to light, although the right eye was normal. There was also a difference in tension on manipulation, and in the left pupil the green or yellow tint that is generally indicative of glaucoma was noticed. On examination with the ophthalmoscope, the characteristic grey colour of the detached retina over the lower half of the field of vision was plainly seen, and when focussed the folds on it came into view. When the eye was moved an undulating motion was given to the retina, the same as would be seen

when a sheet of membrane is moved in water; this undulating motion existed for some few seconds after the eyeball was at rest. This accident is mentioned by Barrier and Guenot, in an article on diseases of the eye in the *Recueil de Médecine Vétérinaire* for 15th November, 1891, and in which the green or yellow tint of glaucoma is specially mentioned as existing. The inference is that it is possible that some cases classed as glaucoma of one eye occurring after injuries, might, if examined by the ophthalmoscope, prove to be detachment of the retina.

THE TRANSMISSION OF TUBERCULOSIS*

(Including an Experience of the Infection of Pigs and Calves by Means of Milk Derived from a Tuberculous Cow),

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No signs of unsoundness showed themselves in the cow during the period intervening between this and the next calving, which occurred about the same time the following year. She was still in good condition and apparently healthy, and she calved easily, but the fœtus was diseased. It had very pronounced hydrocephalus, the upper bones of the skull being completely absorbed, and the skin covering that region was distended to a capacity of about 1½ pints. The significance of this diseased condition of the fœtus, as indicating the existence of congenital tuberculosis, was not remarked at the time, but on the subsequent appearance of disease in the mother its importance was recognised, and constituted a factor in the diagnosis. A few days after calving the cow was noticed to have contracted a slight cold, and although after treatment for a few days the catarrh, and the disinclination to feed and ruminate, &c., passed away, there remained a nasty, hollow cough, and there was an appreciable falling away from the lusty condition in which the cow had been prior to calving. At the end of about six weeks from calving, one quarter of the udder became affected with mammitis, and after subsidence of the acute inflammation there remained an enlarged, hardened, and nodulated condition of the quarter. The cough, loss of condition, &c., continued, and within three months the cow had become a

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typical "piner"—a distinctly tubercular beast, with the continuous hoose and cough, the capricious appetite, the continued large supply of poor and watery milk, the scurfy unhealthy skin, and the lean and lank appearance, all so characteristic of the dire disease in bovines. The affection of the udder, too, which appeared to be extending, was undoubtedly tubercular. My respected preceptor (Mr. Jos. Kendall, M.R.C.V.S., of Barrow-in-Furness, England) made a physical examination of the lungs, &c., which, together with the history of the case, established the diagnosis beyond doubt, and it was suggested to my father to have the cow destroyed without delay. He was just then, however, loath to act on the suggestion, as we happened to have a litter of nine young sucking pigs, about five weeks old, that were rather backward on account of the mother's lack of milk; and, as a hard-headed north country yeoman of the old school, it appeared more practical and economical to him to use the milk to freshen up the young pigs, than to have the cow destroyed at once. Accordingly, until the young pigs were fit to sell, in about three weeks, they were fed from a trough three times daily on the milk of this tubercular cow. When eight weeks old four of them were sold in the open market, and were lost sight of. Four others were sold to the superintendent of the Barrow workhouse, and the remaining one—a sow pig—was kept by us for breeding purposes. The cow was then killed, and *post-mortem* examination revealed one of the worst cases of generalised tuberculosis which I ever saw. In addition to the invasion of the lungs and pleuræ, the walls of the uterus were diseased, the mesenteric glands were affected throughout, and a large portion of the udder was a beautiful specimen of miliary tubercle—the form which the disease most often assumes when attacking the mammary gland. The entire peritoneal membrane was roughened with masses or bunches of grey nodules, and the pericardium was also affected to a considerable extent. I have, however, to deal mainly with the subsequent history of the animals to which the milk of this cow conveyed the disease, rather than with her *post-mortem* appearance. I will let it suffice, therefore, to say that the lesions were those typical of bovine tuberculosis, and were extensive aud general.

I shall deal *seriatim* with the histories of the animals infected from this cow, and will take, first of all, that of the young sow-pig which was kept on the farm. When about three months old a debilitating diarrhœa set in, and in spite of attention, suitable food and housing, it became more or less chronic. As

time went on she exhibited very little growth, and did not thrive. She gradually developed into a veritable "piner," and having exhibited early a sexual desire, she was put to the boar with the object of promoting a thriving tendency; but the improvement in condition and growth which had been expected did not occur. She conceived, however, and farrowed a week before her time, the litter consisting of four dead pigs and one living one, which died during the day. I was from home at the time this occurred, and so missed the opportunity of determining whether these young pigs were congenitally diseased, or whether their deaths were due to the maternal cachexia. The sow had gradually grown very sour-tempered, and although on several occasions I made an attempt to auscultate the thorax, and also to ascertain the temperature, I was unsuccessful. She had a husky, dry cough, and when bustled about the stye for a little while respiratory distress was very marked. We now attempted to fatten her, but although she did scant justice to the fattening process, there was improvement sufficient to effect her sale at auction. She was secured by a local butcher, and by a little *finesse* I managed to be present when she was slaughtered. The intestinal lymphatics and mesentery were principally affected, but the lungs were also extensively diseased, the pleural membrane, both costal, diaphragmatic and pulmonary, being in the words of the slaughterman, "one mass of grapes."

While being able to observe minutely the manifestation of disease in the young sow-pig just referred to, I had also the privilege of access at will to the four pigs of the same litter located at the district workhouse piggeries. The condition and progress of the whole four of them was almost exactly parallel to that of the one I have just described. They had intermittent diarrhœa—did not thrive or grow to any size, and an attempt to get them ready for the Easter market as young porkers totally failed. They were kept on till the end of the summer, and every means to hasten their growth and condition failing, they were sold to a "slink" butcher, who, after keeping them a little while and failing to "freshen them up," had them slaughtered, and their carcases disposed of in a way known only to himself. In confidential conversation with this man some time afterwards, he stated that while he kept them they had chronic diarrhœa and a wheezy cough, and he described to me the appearance of the internal organs after slaughter. He described the lungs as having cheesy masses in their substance, the ribs and skirting (diaphragm) as being "graped," and the net of the bowels or mesentery as being studded with grey nodules or tumours of varying size—

appearances which, to the naked eye, are characteristic of tuberculosis, and which were identical with those of the first pig I described.

If anything further were needed to confirm or intensify the conviction that these pigs contracted the disease by imbibing the milk of the tuberculous cow, I would mention that they were of the sow's second litter. Her first litter was healthy, throve and grew well and strong, and none of the pigs from it that were retained on the farm ever showed the least sign of being diseased. The sow herself was perfectly healthy, well grown, and lusty. She reared third and fourth litters by the same boar, which were uniformly free from unthriftiness or taint of disease; and when she was fattened and slaughtered, all the organs and tissues were found to be quite normal.

I mentioned at the commencement of this paper, that calves as well as pigs became infected by drinking the milk from the diseased cow; and I will now describe as briefly as possible the history of these cases, which, although equally interesting, will perhaps not be considered to bear as strongly on the aspect which points to the likelihood of everyday transmission to the human infant, as the case of the pigs; seeing that in this case there is only transmission from one animal to others of the same species, while in the pig-infection there is transmission to animals of a different species, and one in many respects identical with the human.

It will be remembered that shortly after giving birth to the calf with hydrocephalus, which was followed by the manifestation of tuberculous symptoms in the cow, the latter became affected with tubercular mammitis. Up till this time the milk of this particular cow was mixed with that of the others, and disposed of in the usual way. When the udder became affected, however, the milk was kept separate and was fed along with skim milk and calf meal to seven heifer calves we happened to be rearing at the time. As I have said, the cow was a deep milker, giving at least ten or twelve quarts at each end of the day (the quality of the milk was much poorer than at the prior calving, but the quantity would be maintained until she was killed); so that each calf would get a little less than two quarts of this infected milk twice daily, that is, until the young pigs were fed on it, when the quantity would be reduced to less than a quart twice daily. The pigs were fed three times a day, and the calves twice. Nothing particular, except a general unthriftiness, was noticed to be wrong with these calves until the following winter (February or March), that is, when they were about six months old. By this time, however, first one and then another became

troubled with an intermittent diarrhœa, and capricious appetite; they fell away in flesh considerably, looked half-starved, and by-and-bye, the tell-tale husky hacking cough developed, and became pronounced. Medical treatment was of no avail, and four out of the seven died before the advent of spring; *post mortem* examination of them revealing in a more or less marked degree, in each case, the characteristic intestinal and pulmonary tubercular lesions. The three others rallied a little during the spring; two of them were sold, and lost sight of; but the remaining one succumbed to "tabes mesenterica" and pulmonary phthisis (as seen on *post-mortem*) at the commencement of the following winter.

In this case, too, the negative evidence afforded by older and younger calves points directly to the milk of this particular cow as being the only means of infection; for older calves which were being fed on skim milk from other cows at the time these were having the infected milk, and younger calves born after the slaughter of this diseased cow, grew up healthy and strong, and showed no signs whatever of tuberculosis.

There were two other items in connection with this series of cases which are interesting, and which I should like to refer to, as throwing additional light on the means by which tuberculosis is spread amongst cattle. The first is the subsequent history of the calf from the cow in question, prior to the one with hydrocephalus. It was a male, and being sired by one of the Duke of Devonshire's pedigree shorthorn bulls (the far-famed Holker breed), it was decided to rear it for stud purposes. When about eighteen months old, however, it became hidebound and lame. It developed an affection to which the term "crovocked" is applied in the north country, and which is often considered to be of rheumatic origin, but which is really a tubercular arthritis. When the lameness and concomitant wasting became extreme, I had the suffering beast killed, and the enlarged condition of the joints proved to be distinctly tubercular; the disease in the hip and hock joints was most extensive, but there were no tubercular lesions apparent in the internal organs. It is only reasonable to assume that in this case the tubercular predisposition or diathesis, if not the actual infection, was congenital; and, assuming this, we must also assume that the disease was latent in the mother for a considerable time—until, in fact, the slight attack of pneumonia after the next calving so impaired the physiological resistance of the lung tissue, as to allow of its development.

Again, a fine shorthorn cow, which occupied a position in

the byre side by side with the original cause of the whole trouble, was undoubtedly the victim of infection by cohabitation. For three or four years previously, she had been to my own knowledge in perfect health and condition, but shortly after the slaughter of the diseased cow she developed the hoosey cough and other symptoms characteristic of the disease. I was unable to follow up her history, as an early opportunity to get rid of her for commercial reasons was taken. For similar reasons others were disposed of, and gradually the whole herd was sold, but all to no purpose; for so widespread was the disease in that district—due, to my mind, to the prevailing mania to breed to a fashionable strain of shorthorns which I know to be affected hereditarily—that within twelve months from the time an entirely fresh stock had been secured, the dread disease again showed itself; and, except that my father was about to retire, which necessitated the dispersion of the herd, we should in all probability have had a repetition of the losses I have referred to.

Such, then, is a statement of the more salient features connected with the direct infection of calves and pigs by means of virulent or infected milk. I think the facts are sufficiently weighty, and the evidence sufficiently clear, to render it indisputable that milk from a cow suffering from general tuberculosis including disease of the mammary gland, is a means of infection when partaken of by susceptible animals. Although there have lately been performed experiments which raise a doubt as to the complete identity of the *bacillus* causing avian tuberculosis, with that of bovine tuberculosis, the identity of the latter with that of human tuberculosis has been most certainly proven. It has also been proven that at a comparatively early stage of general bovine tuberculosis the bacilli are present in the milk. And, seeing that it admits of no denial that tuberculosis of the cow's udder is by no means a rare disease, I respectfully submit for your earnest consideration the very great probability of such milk being the source of infection in a number of those cases of intestinal tuberculosis in young children partaking of a cow's milk diet. I think that, given the opportunity to medical men to so thoroughly observe and assign cause and effect in their young patients as I was enabled to in the cases just recorded, there would be equally convincing evidence of frequent infection from diseased cows.

On this point I shall take the liberty of referring to the statements made by Professor Hamilton (Aberdeen), Dr. Burdon Sanderson, and Dr. Barlow (London), at the recent International Hygienic Congress in London. The trend of

their observations was to the effect—(1) That tuberculous lesions of the gastro-intestinal canal were often seen in children as a primary condition; (2) that tubercle of the intestines does not occur primarily, but only secondarily, in the adult; and (3) that, speaking from a clinical point of view, there was no doubt that *post-mortem* examinations in children's hospitals gave evidence of an enormous frequency of tuberculosis; but the direct evidence that such disease was the result of the ingestion of milk and meat was comparatively slight. I am aware that the evidence which is *forthcoming* is slight, but my own observations and the observations of others, confirm the opinion that there would be abundant evidence if a systematic method of obtaining it were in force. What veterinary surgeon, encountering the four pigs I have mentioned as being sold and lost sight of, and in which tuberculosis most probably developed, could determine the method of their infection? The evidence that they contracted the disease by drinking infected milk would be less than slight; it would be altogether absent. Yet such was, undoubtedly, the method of infection. Similarly, what medical man encountering one of the many cases of infantile tuberculosis which are unaccounted for by hereditary predisposition or cohabitation, could with any certainty ascribe the infection to the milk supply? He has no evidence to support any such suspicion, although it may be a reality, and he has certainly no evidence to negative the assumption. Dr. Burdon Sanderson, after remarking that "it was no answer to say that the danger of tubercle infection from bovines was exaggerated, for if it was true that it existed it could not be exaggerated," states "that we are in want of more researches and investigations into the methods of human infection." That which is most to be deplored is the absence of the means whereby these necessary investigations might be made by every medical man in the land, who suspected milk infection in any case. I take it that the object of the systematic inspection and registration of dairy cattle by expert veterinary officials, which has been so strongly advocated at the Congress, would be primarily to afford these means; and independent of aiming at the suppression or prophylax is of tuberculosis, its main advantage would be the ease with which the milk supply to any particular family could be traced to individual cows. In that way the puzzled physician could ascertain definitely whether infected milk was or was not the cause of any particular disease. After the adoption for a year or two of some such inexpensive system, a fairly reliable estimate could be made of the danger to human beings accruing from the in-

discriminate use of milk such as that at present supplied to the people; that is, milk from cattle and dairies which are subject to no expert inspection for disease. Sufficient data could thus be procured on which to base more elaborate operations for the prevention of whatever danger there might be found to exist. Experiments, investigations, practical observations and deductions, all render palpable the danger to a susceptible subject of the use of milk from a case of generalised tuberculosis, or one in which there is tubercular affection of the udder; and the necessity for total prohibition of the sale or use of such milk, and the immediate slaughter of the animal, is generally recognised. There seems to be a little uncertainty, however, as to whether the milk may be infective in cases of localised tuberculosis, and while the udder itself is still apparently healthy; and although nothing can be deducted as bearing on this point from the cases I have recorded, still in view of the many positive results obtained by the experimental feeding of animals with the milk of cows in which no udder lesion could be detected, it cannot be asserted that the milk is devoid of danger, even when the tuberculosis is slight and apparently confined to some organ remote from the udder. Assuming that the active infective agent—the bacillus—is never present in the milk except the tuberculosis has become general, the extreme difficulty of ascertaining the exact time when a localised lesion may become generalised warrants the adoption of measures in all cases, equally stringent and as much calculated to conserve public health, as in cases where no doubt exists of the disease being general.

At the present time, milk from cows with tuberculosis of the udder is being daily distributed in the centres of population in this colony, and there exists no adequate legal machinery to prevent its consumption. While it is within the power of every consumer to protect himself from infection by the simple precaution of rendering the milk sterile by exposure for a few minutes to a temperature of 85° C—a little below boiling point—it may be fairly claimed that the State ought to take steps to protect the public from the imposition on it of unwholesome or infected milk; that, in fact, the public have a right to demand that when they purchase what purports to be wholesome milk, that article of food shall not have mixed with it the germs of a deadly disease. The State recognises its incumbency to protect the public against the mere adulteration of milk and other articles of diet, but makes no adequate arrangement for the performance of a much more manifest and urgent duty, viz., the diminution of the present

risk of these being actually disease-producing. That this duty of the Government was recognised some time back, is evidenced by the fact that important steps towards its performance were suggested by the Board appointed in 1884, to inquire into the prevalence of tuberculosis in cattle in this colony. One of its most important recommendations was as follows:—

"That special inspectors should be appointed by the Governor-in-Council to examine all dairies and dairy cattle, and should hold office under the Central Board of Health and the Chief Inspector of Stock; that such inspectors by preference be veterinary surgeons, if possible with experience in inspectorial duties. That there be one inspector for the metropolitan dairies, and two for the extra-metropolitan dairies, their precise districts and duties to be fixed by the President of the Central Board of Health, and the Chief Inspector of Stock."

The duties of these inspectors were to be, amongst others—"To inspect from time to time all dairy cattle; to seize all dairy cattle found suffering from tuberculosis and other diseases; to have them isolated, and to superintend their destruction. To report to the Central Board of Health concerning the occurrence of disease in dairy cattle."

In concluding its report, the Board significantly remarks, that "the sooner the task of dealing with tuberculosis in cattle is undertaken the fewer will be the difficulties attending it." Yet, although it was elicited in sworn evidence given before the Board that the disease was most prevalent in milch cows, and that the average number of cattle affected would be about ten per cent. of the whole cattle in the colony, and that the disease was most assuredly on the increase, nothing of any account has been or is being done towards effecting its eradication from the dairies of the colony.

There are other means by which human beings may become infected from cattle, but these I have purposely refrained from touching on; for the reason that an infected milk supply is doubtless the most common, its baneful influence may be most easily ascertained, and its suppression most easily effected.

Within the limits of a short paper such as this, and in a single evening's discussion, it would be impossible to treat the whole subject as exhaustively as in the interests of our fellow beings is necessary. I have simply attempted a suggestive consideration of the danger to a community which may not unreasonably be apprehended, from the unrestricted sale and consumption of milk regardless of its source, and

regardless, too, of the fact that we have an insidious and deadly disease widespread amongst our dairy cows—a disease which may be unwittingly, but nevertheless surely, communicated to ourselves and our children, and against which dread communication we have absolutely no protection.

Finally, I would again emphasise the urgent necessity which exists to inaugurate a systematic inspection, at short intervals, of all dairy cattle by a competent veterinary officer, and the registration of all pronounced and suspected cases of tuberculosis, and of all isolations and slaughterings. This latter for the purpose of affording an easy means of tracing the infection in any case or series of cases of infantile tuberculosis to what may be its upper source, and of so arriving at a more correct estimate of the actual danger of infected milk than can be possibly obtained at present.

THE HYDATID-FORMING TAPEWORM—"TÆNIA ECHINOCOCCUS."

BY FRED. C. MAHON, M.R.C.V.S., NORTH LONDON.

I PURPOSE in the following contribution to touch upon the clinical symptoms presented in two dogs—one my own, the second a patient I had under treatment in the autumn of 1891, for a virulent attack of "Distemper," and which, during its progress evinced symptoms undoubtedly attributable, especially in reference to the tardy restoration to health, to the presence within the intestinal tract of the hydatid-forming tapeworm (*Tænia Echinococcus*). Now, as far back as 1883, from notes taken *verbatim* from the late Dr. T. S. Cobbold's Lectures to the Helminthology Class, at the Royal Veterinary College, Camden Town, I understood that no cases of "Tænia Echinococcus" had ever been seen in any English dog which had not previously been experimentally infected. Observations by John Davies Thomas, M.D., Lond., F.R.C.S.; England, lately Physician to the Adelaide Hospital, and Member of the Council of the University of Adelaide, and which were communicated by T. S. Cobbold, M.D., F.R.S., to the Veterinarian in December, 1885, also pertinently refer to this opinion, as to the non-occurrence of this helminth in English dogs.

These notes are taken from collections adduced at times, varying from 1883 to 1892, supplemented by clinical notes of two cases of varied interest, and from a comparative point of view particularly interesting.

TÆNIAC EHINOCOCCUS.—This remarkably minute parasite, though not found in man in its adult condition, is, nevertheless, in one of its larval stages of frequent occurrence in the human body; whilst the full-grown creature seldom attains the fourth of an inch in length, the larvæ, on the other hand, acquire a prodigious size. The latter are familiarly known to the medical and veterinary profession under the name of hydatids. The tapeworm itself resides in the intestines of the dog and wolf, and it is from this source we become infested.

Much space might be devoted to an explanation of the various possible ways in which the little tapeworm eggs and their embryos gain access to the human body; but for all practical purposes it is here sufficient to remark that they commonly enter the mouth along with food and drink—more particularly with the latter.

They may also be transported as dust, by wind and other agencies, and thus be carried directly into the mouth; or they may be brushed against the lips, adhering there for a time before being swallowed. Residence in densely populated districts, where dogs at the same time abound, is eminently favourable to the introduction of these creatures into the human body, Thus, though not unfrequently attacking the wealthy, they are much more common amongst the poor. The frequency of the Echinococcus disease in Scotland and Australia is well-known, and it would be out of place to discuss the subject here. Reference can be made, however, to Dr. Cobbold's Lectures on Hydatids in the *Lancet* for June 19th, 1875, where a tabulated analysis, showing the distribution of hydatids in the different organs of the body in 700 cases collected by Davaine, and Dr. Cobbold, M.D., appears.

The Tænia echinococcus—Tænia hominis (*Rudolphi*).—Synonyms: *E. Veterinorum*, Bremser, Gurlt, etc.; *E. Scoliparіens*, and *E. Alticiparіens*, Kuchenmeister; *E. Polymorphous*, Gœze; *Hydatis*, Ludersen; *Hydatigena*, Batsch; *Vesicaria*, Schrank. Adult Stage—*Tænia echinococcus*, Von Siebold. Ultimate Host—Dog and Wolf.

Remarks.—Forms three well-marked types of hydatid growth, known to pathologists as Exogenous, Endogenous, and Multilocular varieties (*E. Multilocuraris*, Virchow). The liver is the organ most frequented. Thus, in 327 cases collected by Dr. Cobbold, 373 by Darvaine, and 983 by Neisser—giving a total of 1,683 cases, the average number of liver cases was nearly 46 per cent. Hydatids probably proved fatal in 25 per cent. of all the persons attacked.

In Iceland they are the cause of one-sixth of the annual mortality. Lit.:—All standard works on Helminthology, especially those of Leuckart and Davaine. The best monograph is that of Dr. Albert Neisser (*Die Echinococcen Krankheit*, Berlin, 1877).

Recent additions to the purely surgical literature of hydatids are far too numerous for separate quotation; but in this connection practitioners will do well to consult the *Australian Medical Journal*, which contains papers by Dr. H. S. Wood, W. Thomas, W. Snowball, and others.

Of all the entozoa infesting mankind and animals, the little *Tænia echinococcus* is one of the most remarkable, and the facts of development which render the parasite so interesting to the helminthologist have an intimate bearing on the questions of general and agricultural hygiene.

The larvæ form the common hydatids or bladder-worms of veterinarians *(E. Veterinorum)*. As in the dog the full-grown tapeworm only reaches the length of one-third of an inch, it is very difficult far the non-professional man to realize the fact that the same entozoon in its larval or vesicular stage attains a size many thousand times exceeding that of the parasite in its adult condition. Harmless when full-grown, it is fearfully destructive to life in the juvenile stages of growth. To be sure, its bad effects are chiefly witnessed in the human subject, but cattle, sheep, and swine occasionally perish from the presence of the larvæ within the vital organs. If it be asked how all this mischief is brought about, the briefest answer will suffice to explain the matter practically. The herbivorous animals and man himself get the Echinococcus disease by swallowing the eggs of the hydatid tapeworm. The parasite possesses, instead of the ordinary body of numerous segments, but four, if in this number we include that of the head, or proscolex as one.

The lowest of the four proglottides is sexually mature, and contains some 10,000 eggs, of a dark brown colour.

Length of parasite when fully grown, $\frac{1}{4}$ of an inch; $\frac{1}{3}$ is often, however, a common length. The head is armed with four suckers, and the snout or proboscis is prominent, and upon the head are from 30 to 40 hooks, which are minute, the largest being from $\frac{1}{450}$ of an inch to $\frac{1}{1000}$ of an inch in length. The hooks are arranged in two rows.

Habitat.—Small intestines of the dog.

When speaking of the cestodes of man, mention is oftentimes made of bladder-worms. By these terms or term we mean the scolex condition of a minute tape-worm which resides, as above-mentioned, in the canine host. From a

sanitary and professional point of view, this parasite is of more importance than all the others grouped together. Experimental surgeons have to deal, in many instances, with this parasite, and it is computed that not less than 400 persons perish annually from this worm. In Australia and Iceland the Echinococcus disease is exceedingly fatal to man.

The parasite is also scarcely less frequent amongst animals, although in these bearers its presence is only rarely attended with fatal consequences. Zoologically and morphologically, the common hydatid is of great interest. Whilst the sexually mature worm supplies us with a tapeworm altogether unique (both as regards size and the small number of its proglottides), the larva, in the character of an hydatid, presents us with a type of polycephalous bladder-worm which, likewise, has no parallel.

The hydatid furnishes us also with a curious illustration of tapeworm multiplication from a single germ. Starting with the postulate that the sum total of the products of a single impregnated ovum fairly represents the "individual" (zoologically, so to say), we find that whilst, on the one hand, the egg of any ordinary tapeworm begets only one tænia, the egg of the hydatid tapeworm is capable of producing, under favourable conditions, several thousand tapeworms.

To appreciate this truth, it is only necessary to observe that the six-hooked embryo becomes one hydatid. This maternal bladder-worm may, by proliferation, beget daughter and grand-daughter hydatids, all of which, in their turn, may give rise to the formation of echinococcus' heads in their interior. Separately, these so-called heads represent as many tapeworms, and collectively they amount to as many thousands. Thus, when a dog or wolf swallows the polycephalous hydatid and its offspring, all the heads of the colony will become converted into sexually mature tapeworms in the intestine of the new host.

The zoological individual, therefore, will comprise not merely one tapeworm, but a multitude of tapeworms. In other words, whilst the egg of an ordinary tapeworm like *Tænia mediocanellata* supplies a single colony or strobile of 1,200 joints (*Proglottides*) or zooids, the egg of the *Tænia echinococcus* supplies several thousand colonies or strobiles, each of which is made up of three segments and a head.

This singular mode of tapeworm multiplication is only witnessed, though in a much less degree, in other forms springing from polycephalous bladder-worms.

The liver in man is affected in 46 per cent. of cases. This result was obtained, as before-stated, by the late Dr. Cobbold.

The mode of infection in the human host is probably by means of the air, wherein the eggs of the *Tænia echinococcus* are carried about in the form of a palpable dust. They number 17 per cent. in the abdominal cavity, 12 per cent. in the thorax, including the centre of circulation, viz., the heart; when occurring here it is necessarily very fatal. In the heart, 3 per cent., brain, 6 per cent., 4 per cent. in bones, and 13 per cent. in various miscellaneous structures, is the average prevalence.

Of 2,109 animals slaughtered for ration food in the Punjaub, North-West India, 42 per cent. of all apparently healthy animals had hydatids in various viscera.

Out of 899, 829 had them in the liver, and 70 per cent. in the lungs. It is somewhat surprising to what extent animals may be suffering from hydatid disease, without any well-marked constitutional symptoms being evinced.

The hydatids in India are often found in the kidneys, spleen, &c., but not in such great numbers as in the organs hitherto mentioned.

Hydatids (echinococci) may exist in young pigs of a few months old. I remember, in 1884, a well-marked specimen being exhibited by Dr. Cobbold to the Helminthology class, a portion of which specimen I still retain. It was the liver, studded with numbers of these hydatids, obtained from a litter of six; the history of the affected animals was not well known. Of 3,000 Spanish bullocks landed at Portsmouth in 1883-4-5, from Corunna and Oporto, whilst I assisted Mr. J. T. Gregory, M.R.C.V.S., Portsmouth, in Government inspection work there, only one case came under our notice in the liver, and this was but slightly affected. We are not generally acquainted with the maladies in the Iberian peninsula, and I have not met with any statistics of diseases of late years occurring there they do not bear me out in considering the cattle of that country, on the whole, extremely free from parasitic diseases.

Dr. Cobbold on several occasions found hydatids in man and in the monkey, also in carnivora and herbivora.

Von Siebold also on one occasion met with hydatids in the liver of the turkey. According to the former authority, it was held as a fact that the *Tænia echinococcus* had never been seen in any English dog which had not previously been experimentally infected. Are the experiences of the canine specialists of the profession, such as A. J. Sewell, Rowe, and W. Anderton, to the contrary?

Out of a total of 63 cases occurring in my "canine practice" last year, several of which I treated for parasites, five cases had these tapeworms present. I purpose, therefore, before concluding this article, to touch briefly upon some in-

teresting points met with in two cases, No. 2 undoubtedly contracting the parasites from No. 1.

Case I.—This was a very remarkable case, the patient being under treatment for some five weeks for a virulent attack of distemper, in which chorea was very pronounced. The history which I gathered from her owner, was that from the time she was purchased by him, some fifteen months previously, when only three months old, she had been of a fretful and nervous temperament, with peculiar symptoms, noted particularly in walking down an incline, or when running, and which they attributed to an injury (supposed) to the "loins."

Her appearance certainly betokened the presence of helminths of some kind or other. The anæmia, notwithstanding apparent recovery towards the third week from the distemper attack, was accompanied by capricious appetite, muscular twitchings (chorea) generally distributed, pain on pressure in the abdominal region, surface temperature unevenly shown, being cold and warm at brief intervals, offensive odour from the mouth, inordinate dilatation of the pupils in a semi-darkened room, intolerance to gas or lamp light, or to light of any character, shrinking into a corner when approached suddenly, restless desire to bury the body under bedding being conspicuous. Moaning, too, was noticed. Temperature 103·4° Fah., on admission for treatment for distemper, falling on the 10th day to normal. Fæces tinged with biliary matter, of an offensive odour, which continued notwithstanding alteration of food, mild aperient medicines, or essential cholagogues. On the 27th day of treatment, I noticed the presence in her fæces of minute parasites, whose heads were tinged with blood, and shortly afterwards noticed the passage of blood-coloured fluid with liquid fæces. Marked irritation of rectum persisted for some few days, but notwithstanding I watched her closely, both during the remainder of her stay with me, as also whilst confined in a kennel at her owner's, I did not in any single instance find any more of the tænia, though at intervals she was treated with kamala, areca-nut, and enematas. The total number expelled on being separated was ninety-three. Her age was eighteen months on leaving my infirmary. A peculiar and interesting fact may also be noted, viz., that noticing want of co-ordination of muscular movements during progression, also giddiness, inability to turn sharply either to the right or to the left, and for days it was noticed that she fell in attempting to leap over any obstacle a few inches in height. I accordingly prescribed tonic treatment of tr. cinchona co.,

with iron compounds, and occasional administration of pot. bromide, grs. iij, every other day, with no beneficial result. Deeming the case at this stage one requiring nervine tonics, I had recourse to liquor strychniæ, minimum doses; the first dose in twenty minutes produced tetanic convulsions, and nearly caused death. I now, beyond beef tea, plenty of milk, and weak brandy and spt. ætheris nit., abstained from medicines to any great extent. She rapidly improved. Weight on day of entry for treatment 7 lbs., in six weeks 10½ lbs., three months afterwards 20¼ lbs. Was the attack of distemper altogether the cause of the symptoms presented? My opinion is, that the marked irritability of the nervo-muscular system and the progressive anæmia for some weeks, were due in great measure to reflex action, the primary cause being the presence in the small intestines of what I have ventured to call true tænia echinococci. These specimens I purpose submitting to inspection shortly by experts in helminthology in the veterinary profession.

Case II.—My own Irish water spaniel, 8½ years old, which on the 9th of January of this year passed some forty-three dead tænia in one defæcation; on the next, fifty-four; none afterwards—total 97. I noticed her occasionally vomiting, with capricious appetite, abdominal pains slightly shown at intervals of three or four days, bowels costive. I prescribed on the day before discovering the parasites a dose of purgative medicine, with bismuth nitrate as powders, twice daily. Did the purgative medicine kill the tænia or not?

I offer these notes in a rough form, and make no attempt to enter deeply upon such interesting and vital points in connection with the protection of human life, or the ulterior fact that I do not know of any recorded case by veterinary surgeons where a diagnosis of this helminth in the dog has been recorded.

AZOTURIA (?).

A case under observation for ten years—with a Post-Mortem at the end of that time.

BY THOS. B. GOODALL, F.R.C.V.S., CHRISTCHURCH, HANTS.

THE title of this paper should at once arrest the attention of any truly interested comparative pathologist, particularly as the post mortem examination throws light on a possible or probable cause of the lesions that have been recorded from time to time, as diagnostic of the disease we have been accustomed to style and describe under the name by which this paper is headed.

I have adhered to it here to avoid confusion—though I quite agree with some remarks that I remember reading in an article by Professor McFadyean on this disease, in an early number of the *Journal of Comparative Pathology*, to the effect that our knowledge of the disease was yet too imperfect to decide on the nomenclature to be ultimately adopted.

I shall be quoting him correctly when he says—"that we are yet in ignorance as to the morbid process that sets the pigment or crystals of hæmoglobin free, or as to the exciting cause of that process."

I think I shall be able to prove the probability that this is never set free, because it has never been taken up by the blood discs; and as this is my object in sending this paper for publication, I shall not weary your readers by wading through the oft-repeated tale of symptoms and the many courses of treatment that have been advocated from time to time by various authorities.

The symptoms of an ordinary attack, and which I have generally found to be present in many cases that have come under my own observation and treatment, are—

The sudden paralysis of the hind quarters—the horse dropping almost as though his back were broken—dark coloured urine, always a profuse perspiration; the temperature seldom rises much above the normal.

I take the above to be the diagnostic symptoms for the practitioner, who cannot always carry his microscope and camera to every case.

The struggling to rise would be the same if the horse were forced to keep in the recumbent position from any cause.

As a rule, the horse, when down, will take a fair amount of nourishment.

I do not think we should place much reliance on the pulse in this disease, as a means of diagnosis; because when we see our patient, he is sure to have been more or less upset in his endeavours to rise.

The duration of the paralysis is usually about 48 hours, though the period varies a trifle one side or the other of this.

It has been said that about fifty per cent. of the cases are fatal. In looking through my notes of a number of cases of this disease I have had under treatment, I can certainly say that my average of fatal cases is nothing approaching this high standard of mortality.

The horses affected are *invariably* those that have not been fed and managed *rationally*, and *always* on being first brought out of the stable after being kept in for a few days, and at the same time being fed on highly nitrogenous food.

This points to the affection as being primarily a disease of the digestive organs, of which more will be said anon.

Treatment.—In this and allied disorders, the practitioner is given to err on the side of placing too much reliance on the amount of medicine he is able to pour down the horse's throat, or by subcutaneous injection, without always being able to give a satisfactory reason for doing so. Many practitioners honestly think they are doing right, and they would imagine that they were failing in their duty to their clients to omit this, to give a draught or ball of some kind every hour or two. And what an array of medicaments of all sorts of actions do we see advocated for the treatment of this disease!

After a long experience now, I have no hesitation in saying that the patients would do far better if reliance were not placed so confidently in the amount of the medicine administered, as on their general comfort and diet.

Slinging, I am sure, is a mistake; it increases the nervousness and restlessness, and should not be resorted to except in some few cases where, after the horse has been down, perhaps, for a couple of days, he appears to have lost all heart in making an attempt to rise. In these cases it might be permissible to raise him with slings, but they should be removed as soon as the patient gains confidence sufficient to rely upon his own legs and feet for support.

Let the patient be supplied with a comfortable bed of *short, dry* litter, and have the ground on which he is compelled to lie kept *dry* and clean. Let the body be well clothed, and the skin kept freely acting by this means and by friction.

The patient should be moved over from side to side every two or three hours. Give fluid *ad libitum*. Mangolds, as an article of diet, should be avoided, as poison. Neither should the patient be allowed either beans, peas, mow-burnt hay, or kiln-dried oats.

The bowels usually act well, but it is good practice to keep the fæces pultaceous, either by diet, such as linseed mashes, or a *mild aperient—not* a purgative.

The administration of a stimulating draught of ammonia, with chloric ether and belladonna, two or three times a day, to allay nervous irritability, is helpful. Good hot applications to the back and loins are essential.

This line of treatment will, in the majority of cases, be followed by recovery.

In human practice this disease is never fatal; may it not be possible, then, that the high rate of mortality in our patients is the result of over-interference, and in our desire to be doing

something we frustrate Nature's efforts to recover herself, and hasten the fatal termination?

The restlessness of the horse that is down is often induced, and frequently increased, by his inability to empty the bladder when in the recumbent posture. The urine would be particularly irritable to the neck of the bladder in the disease under consideration.

The practitioner should make it a rule to empty this viscus, either by pressure or by the catheter, twice a day when practicable, or at each visit.

I should now like to briefly run through a history of the case that induced me to pen these notes, and then to draw attention to the conclusions it appears to me we are warranted in drawing, from the post mortem appearances, as to what may be a *cause* of the disease we know by the name of Azoturia.

The subject was a chestnut gelding, the property of a grocer, and used for taking goods round in a van. His work would be fairly hard, but he was kept liberally, and in the winter time, in addition to his oats, he had a rather free allowance of beans and mangolds.

He was examined by me for soundness in April, 1879; he was then five years old.

On December 28th, 1882, I was called in to see him, and found him to be suffering from an acute attack of *Azoturia* symptoms such as I have described.

He did not get up before the 31st; from this date he soon regained strength, and went to work on January 4th, 1883.

The horse kept in health until December 28th, 1885, when I was again requested to see him, and again found him showing just the same symptoms as in his former attack in 1882.

On this occasion he regained his feet on the 30th, and was recovered by January 1st.

I ought, perhaps, to mention that, as my patient was not far from the slaughter-house, my hot applications to the back and loins in both these attacks consisted of the old-fashioned remedy of a sheep-skin, fresh removed and applied with the inner surface to the skin of the horse.

The dates of the two attacks are significant. The horse would doubtless have been harder worked, and have had a more liberal allowance of beans before the Christmas festivities; this busy time would be followed by a period of quiet; but the rich nitrogenous food would be, in all probability, continued.

After this, I watched the horse with some interest, and made enquiries after his health frequently, either from his

owner, or from the man whom I was frequently meeting on the road, and to whom I often gave advice as to diet and management; but there was no further illness until June 22nd, 1891.

On this day the horse had an attack of Tympanitis, of an alarming character. I was hastily summoned, and found the distension evidently proceeding from the stomach; the body was greatly distended, and there were constant eructations of flatus. Large doses of hyposulphite of soda were given, and the alarming symptoms soon abated.

From this date the symptoms of flatulency and pain were intermittent. There was often acute pain soon after food, and frequently the stomach would become inflated. The usual antispasmodic medicine gave relief.

The appetite would appear to be good. The horse would take a few mouthfuls of food as though ravenously hungry, and would suddenly leave off eating with sometimes very acute, and at others sub-acute pains.

The temperature in this attack was always normal; urine high-coloured, and very albuminous; on one occasion, some that had been saved in a vessel for my inspection was "set;" quite gelatinous-looking and brown coloured. Pulse always *full*, mucous membrane sometimes deep coloured, sometimes normal, and once pallid.

From the beginning of this attack (June 22nd), the horse, before in good condition, began to lose flesh until, before death, he was very poor.

He had acute abdominal pains on the night of July 20th, and died during the night.

Autopsy.—The most striking revelation was the condition of the *pancreas*. This organ had the appearance of a huge sarcomatous growth, and would weigh six or seven pounds.

The pancreatic and biliary ducts were much thickened, and their calibre apparently obliterated; that of the biliary duct was so from pressure of the growth of the pancreas.

The stomach very large, and containing a large quantity of semi-fluid, *oily* food; this *oily* look was very noticeable. One could have fancied that oil had been administered, but there was not the *smell*.

The pyloric orifice of the stomach and the commencement of the duodenum were not obstructed as I expected; but the coats were *atrophied*, and had lost their tone and peristaltic action.

The liver was quite three times its normal size, and was distended with healthy-looking bile. In squeezing the organ, the bile would exude through the ducts that had been severed in section, like a bright yellow, thick paint.

The section of the liver was a bright yellow, with a beautiful arborescent appearance.

The kidneys were very large and flaccid, and in the hilus of each was a little thick, gelatinous-looking matter.

A peculiar smell was noticeable after section of the kidney.

The large intestines were impacted with fæces that were literally "as dry as chips," due to the absence of bile.*

My great regret is that I was prevented making the post-mortem examination until some hours after death, and then I found the animal skinned, and the viscera exposed to the air and the flies of a hot July day. The parts were consequently unfit for microscopical examination, and the portions I have preserved I was obliged to place in a solution of perchloride of mercury.

In the annals of human pathology, we find records of albuminuria and Bright's Disease sometimes associated with disease of the pancreas, and the practitioners in the sister profession are advised not to overlook this probable complication.

I never remember seeing these lesions recorded in any work on comparative pathology, neither do we often have the opportunity of recording the history of a case through so many years; for our patients, after a severe illness, are usually "passed on," and we lose sight of them.

The symptom that in human pathology is regarded as almost diagnostic of disease of the pancreas, is the presence of oily or fatty substances in the stools.

Let us bear in mind that this disease (Azoturia, or whatever we finally determine to designate it), and what there are grounds for believing to be an allied disease, viz., Red-water in cows, are first induced by some derangement of the digestive organs—"Red-water when cows are kept on undrained, poor land;" "Azoturia" when horses are kept idle and fed on food too rich in albuminous products; either of these methods of feeding may lead to disease of the pancreas.

The horses that we find *invariably* affected, are those that are being dieted on articles rich in starch and albumen, and after being idle.

It is beyond dispute that these products are digested by the pancreatic secretion. Horses kept under the conditions indicated must get hyper-secretion of the pancreatic fluid. The organ, like any other that is over-worked becomes unable to meet the inordinate demands made upon it, the

* I place this fact on record; but I should also state that for the last fortnight of his life the horse was not under treatment. The hopelessness of the case had been pointed out to the owner, with the intimation that the horse might die at any time, and he was therefore not destroyed.

result of which is the state we term "disease," and then a suspension or suppression of the secretion.

It is probable that the albuminous, starchy, and fatty elements of the food are now passing through the digestive tract unacted upon by the pancreatic secretion, though they have been rendered capable of assimilation by the action of the gastric and biliary secretions, with the result that the blood current is charged with a material such as would be produced by the *waste* of the body tissues.

What the exact action of the pancreatic secretion is, has not been satisfactorily demonstrated.

The existence of such an organ as the pancreas seems to have been entirely overlooked, and its secretion ignored by pathologists.

Professor McFadyean, in the article from which I have already quoted on the disease under consideration, lays stress on the presence of the crystals of hæmoglobin in the blood. I have found the crystals in two instances in the blood of the dog, and in neither case was there any suspicion of disease of the kidney—therefore this in itself must not be regarded as diagnostic—but the post mortem revelations of my case throw an entirely new light on the probable causation of the presence of these crystals in the blood plasma, which, I think, may be accounted for in this way.

The products from which hæmoglobin is formed may not have been normally prepared for assimilation, owing to the defective action of one of the digestive secretions, probably the pancreatic, *and for this reason, it has never been assimilated by the blood discs.* This, at any rate, seems a more feasible solution of the problem than any hitherto promulgated.

The chain of symptoms which follow, and out of which the synonym of the disease has been elaborated, are easily accounted for.

The blood is charged with an abnormal product, rich in the elements which it is the function of the kidneys to excrete, and we get the conditions mentioned as Azoturia, etc., as a sequence.

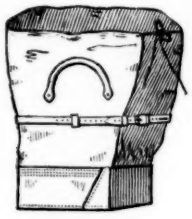
The treatment usually adopted with success is such as would tend to restore a normal pancreatic secretion, though this has not been adduced as a reason.

In such a chronic case as the one I have been citing, it is probable that the deficiency of the pancreatic secretion was made good by the action of other digestive organs. Nature will, in time, accommodate herself to many abnormalities.

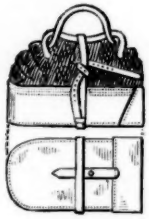
It is the *sudden* changes that most frequently induce the most violent paroxysms of disease.

RUSSELL'S CHLOROFORM INHALER.

CAPT. RUSSELL, F.R.C.V.S., Grantham, has devoted some considerable time and attention in bringing out a new chloroform inhaler, which we think will give great satisfaction to the profession. The accompanying wood-cuts represent the inhaler in its different stages:—No. 1, the inhaler ready for use; No. 2, same folded up for travelling; No. 3, in use.



No. 1.



No. 2.

No. 3.

Capt. Russell bases his ideas on Carlisle's celebrated inhaler, and his improvements consist in: 1st, the inhaler being much lighter and larger, and more suitable for heavy horses than Carlisle's. He has also done away with the bridle and other appliances which he found so inconvenient when performing an operation. In administering the chloroform, Capt. Russell fixes the horse on its side, with the assistant on the head holding the inhaler, as shown in drawing No. 3. By this means, he finds that anæsthesia is much more rapidly induced, as the inhaler fits the contour of the face; it was very slow when it did not. He is also confident that the assistant

holding the inhaler with the hands, is much safer than fixing it round the head with a strap, as it can be removed at once without delay in case of necessity; so that the inspiration should not in the least be impeded—for safety in the administration of chloroform depends entirely on the respiration. It is a fact well known to chloroformists, that when administering an anæsthetic, sufficient air must be permitted to enter the lungs, in order to allow them to perform the function of respiration; as the breathing will then be regular, and no danger can ensue. But as soon as the breathing becomes irregular, then there is danger, because it shows that sufficient air does not enter the lungs for the necessary aeration of the blood. This has been the great aim of Capt. Russell when he thought out the improvements referred to in this notice; and we consider that he has succeeded in bringing out an inhaler, which will obviate all the risks that ordinarily accompany the administration of chloroform. Apart from the scientific side of the question, Capt. Russell has also kept his eye on the practical; as the bag part of the inhaler, being made of stout canvas, will stand any amount of wear, and with use becomes soft, and adapts itself to the horse's face. The strap round the middle when in use, keeps the canvas close to the face, and when not in use, it can be removed and applied round the folded bag, and in this way it makes a compact parcel of the whole, that may be carried in the hand. We consider that Capt. Russell has not only succeeded in bring out an inhaler which is thoroughly scientific, but is also of real practical value, and reflects very great credit on the inventor. We heartily recommend it. The inhaler can be had direct from Capt. Russell, Grantham, or from his agents, C. J. Hewlett and Son, London.

SAND COLIC.

BY R. DAWSON, M.R.C.V.S., WESTON-SUPER-MARE.

THE following is a note of an interesting case:—

On the 23rd February, I was called to see a roan mare. The animal was suffering from super-purgation; temperature 99° F., pulse almost imperceptible; suffering much pain, and continually pawing and kicking at her belly; *the cartilago nictitans was protruded over the surface of the eye.*

24th.—Symptoms much as on the previous day, but breathing laborious.

25th.—Temperature 101.3°; the diarrhœa has ceased, but animal appears much weaker, and breathing with still greater difficulty. Abdomen much distended with gas. Towards night the mare gradually became worse, and ultimately died at about 5 p.m.

Post mortem.—All the large intestines loaded with dark-coloured sand, to the amount of a large bucketful. Lungs and all the other viscera somewhat congested.

ON THE THERAPEUTICAL VALUE OF OL. EUCALYPTI IN VETERINARY PRACTICE.

BY E. WALLIS HOARE, M.R.C.V.S., CORK.

THE article in last month's VETERINARY JOURNAL on the above subject has induced me to pen the following lines on the value of this drug. In canine practice I have used it with great success in cases of putrid distemper, when all other internal antiseptics seemed to fail.

Given in doses of 20 to 30 minims, it seems to act not only in combating the virus, but also as an expectorant. Along with its internal administration, I use it as an inhalation with very good results.

In equine practice I have used it in Influenza, and found it very useful where there is high temperature, or a tendency to septicæmia. As an inhalation in cases of Bronchitis, it is of great value; but the expense does not permit of its use in all cases.

As an antiseptic dressing, it proves very efficacious, does not irritate, and, combined with iodoform, forms a very useful ointment.

Being non-poisonous to the system, it possesses great advantage over the use of carbolic acid in cases of septicæmia.

The dose for horses would be about from two to four drachms, either administered in alcoholic solution or in mucilage.

Editorial.

THE SUPPRESSION OF CONTAGIOUS DISEASES OF ANIMALS.

THE recent re-introduction of Foot-and-Mouth Disease, and its extension over a wide area in this country, as well as previous visitations of it and other infectious maladies, amply demonstrates that, notwithstanding the insular position of this country, and the measures adopted against the invasion of such plagues, there is no real security, and that their re-appearance—after being extinguished at great loss—is only a question of chance. It is confessed that the source of the present invasion is unknown; for though certain Danish cattle were blamed as the carriers of the contagium into the metropolitan market, yet the country from which they came was then, and has continued to be, altogether free from it: so that they could not have been infected in Denmark. Besides, other outbreaks have occurred in remote parts of Great Britain, which can in no way be connected with these cattle, nor yet with the London market. In the endeavour to account for these outbreaks, it is explained that infection can be conveyed by forage, manure, people, birds, etc.. which, there is reason to believe, is a correct statement. But this view is a serious one, as it leaves no hope of absolute immunity from such visitations, no matter what precautions are adopted, so long as surrounding countries are infected. For it is evident that mere port inspection of animals is no safeguard, neither does an elaborate and expensive machinery suffice to limit the extension of the invader. The existence of such plagues, which are maintained solely by virtue of their contagious properties, are not only damaging to the countries in which they exist, but are a serious hindrance to international trade. Surely, it must be greatly to the interest of these countries to limit and suppress such scourges, the extinction of which is not beyond a well-concerted and vigorous effort. If all the European nations would combine in the simultaneous adoption and energetic carrying-out of certain measures, there can be no doubt that these destructive and harassing diseases could be got rid of; and the discussions at the various international Veterinary Congresses have shown that such action should be attempted. The idea is not at all utopian, and as civilisation progresses, and its requirements become more urgent, such a course will compel attention. At present, it is evident that neither sea nor land obstacles will guarantee a country from the intrusion of such a malady, for instance, as Foot-and-Mouth Disease.

IS INFLUENZA IN MAN AND ANIMALS ÆTIOLOGICALLY DISTINCT?

A paper read before the Epidemiological Society, February 17th, 1892.

BY RICHARD SISLEY, M.D., M.R.C.P.

ALTHOUGH a comparative study of the diseases which affect animals and man has attracted the interest and observation of the more thoughtful portion of mankind for centuries, the subject has received less attention than its importance merits. Medical studies are still carried on in our hospitals and in our universities with little regard to the question, and at the present moment no systematic instruction is given on it in any school in this town. The Apostles of Drugs still flourish, and the idea of curing a disease which is best left to run its course is still a more popular one than a study of the natural history of a disease. The Epidemiological Society possesses the great advantage of bringing together to meet on common ground, not only those who take an interest in epidemics amongst men, but those also whose chief care it is to guard against and study the history of epizoötics in animals. From such a representative body I hope, therefore, some new evidence may be forthcoming on the question, "Is Influenza ætiologically distinct in man and in animals?" and I trust that a discussion to-night and future investigations may clear up some obscure points.

The question is beset with difficulties which cannot be passed over in silence. It cannot at present be confidently affirmed that we are fully acquainted with the ætiology of human influenza. It is generally, if not universally, admitted that the most deadly epidemics have had a foreign origin, those of the years 1510, 1557, 1732, 1743, 1782, 1803, and 1837, all, to use the words of Dr. Peacock* "extended their range from Asia through Russia and Turkey to the countries of western Europe." But in Europe sporadic and epidemic outbreaks occur of a disease which careful observers believe to be influenza.

Dr. Fiessinger† says that in Oyonnax, a little town of 4,000 inhabitants, situated at the foot of the Jura mountains, influenza frequently occurs in bad seasons. In 1887 a number of children were affected. In January and February, 1888, there were two isolated cases; in February 1888, there was an epidemic.

In 1890, the Minister of Public Instruction in France appointed a commission to investigate influenza in Russia, and the result was the production of a valuable report written in the charming style possessed alone by French medical writers. In this report M. Tessier‡ clearly shews as a result of enquiry on the spot and by reference to official documents that influenza is believed to be endemic in Russia.

Sir Peter Eade§ in 1878 described an epidemic outbreak in Norfolk, analogous to, if not identical with influenza. In answer to a letter in which I asked Sir Peter Eade what opinion he had formed as to this outbreak, I received from him this morning the following reply, which I am sure will be of interest to the Society. "As to what you ask me about the epidemic of 1878 as observed in this district, it lacked much of the head and back pains, and shewed rather more catarrh than our recent outbreak, but in all other respects it was similar. I formed the opinion that it was *modified* influenza." That catarrh is often called influenza appears certain, but the histories of the epidemics spoken of by Teissier, by Fiessinger and by Sir Peter Eade leave no doubt in the mind that these outbreaks are by no means to be explained by so simple an hypothesis. To what then were these outbreaks due—what is their ætiology?

* On the Influenza, or Epidemic Catarrhal Fever of 1847-8. London, 1848. p. iii.

† *La Grippe infectieuse à Oyonnax (Ain) Novembre*, 1888 *à Avril*, 1889. *Paris*, 1889.

‡ *L'Influenza de* 1889-1890 *en Russe*. *Paris*, 1891.

§ *Lancet*, March 10th, 1878. Medical Notes and Essays—Fasciculus, ii. Influenza. London and Norwich, 1891.

This initial obscurity in the ætiology of influenza in man has an analogue in the ætiology of equine influenza. Some veterinary surgeons, I am told, apply the term influenza to a catarrhal disease, which by others is called "London fever." In France, MM. Megnin and Veillon * came to the conclusion, after careful consideration, that until French Veterinarians expressed more clearly what they meant by equine influenza it was useless to draw any deductions from observations on the disease.

In England, however, there is fortunately no such hopeless ambiguity about the writings of our best veterinary authorities, who have indeed been greatly in advance of most recent medical writers on human influenza. As long ago as 1875 Professor Fleming† clearly and strongly expressed the opinion that equine influenza was contagious whilst, it may be remembered, that as late as May last, doubt was thrown, even at a meeting of this Society, on the fact that influenza in man is spread by contagion.

It is obviously impossible in the time at my disposal to enter fully into any historic account of the epidemics of influenza which have affected man, and the epizoötics of influenza which have affected animals. Nor is it possible, on the other hand, to entirely ignore the teaching of history.

The quantity of literature on the subject is appalling; a large library would not contain it, nor could any man in the course of a long life hope to fully master it.

Fortunately, several writers have made it possible to get a general idea of the history of influenza in man. Dr. Frank Clemow‡ has made a special study of the earlier epidemics; the later ones have been summarised by Dr. Copland § Dr. Theophilus Thompson ‖ and others, and more lately Dr. Charles Creighton¶ has added considerably to the sum of our knowledge of the disease as it affected this country.

An exhaustive account of epizoötics of influenza in animals is given in Professor Fleming's classical work, *Animal Plagues.*

From these sources tables have been drawn shewing the chief years of epidemics and epizoötics of influenza. History as recorded by the authorities quoted and summarised in the tables shews:—

1. In some years epidemics of influenza have been unaccompanied by epizoötics in animals.
2. In some years epizoötics in animals have been unaccompanied by epidemics in men.
3. In some years epidemics in man and epizoötics in animals have co-existed.

It might be argued from this that there is no connection between epidemics of influenza in man and epizoötics in animals, and that the occasional coincidence of them is a matter of chance. What direct evidence is there pointing to the spread of influenza from man to animals, and *vice versa? First with regard to horses.* There is absolute unanimity amongst Veterinary Surgeons that horses have influenza, and that the clinical varieties of the disease are similar to those which occur in man. But as to whether influenza can spread from horses to man or from man to horses, there is no agreement. Dr. Theophilus Thompson's book supplies no instance. Professor Fleming in his experience and his researches has come across no such instance. In a letter he kindly wrote to me in 1890, and which with his permission, was published,** he says, "Neither is there any evidence that the disorder has

* *Comptes rendus hebdomadaires des Séances de la Société de Biologie q.s. Tom* 11. *p.* 180.
† A Manual of Veterinary Sanitary and Police. London, 1875.
‡ *Public Health*, vol. ii., p. 359.
§ Copland's History of Medicine, vol. iv.
‖ Annals of Influenza. London, 1852.
¶ A History of Epidemics in Britain from A.D. 664 to the extinction of the Plague. Cambridge University Press, 1891.
** Epidemic Influenza. Notes on its origin and method of spread. Longmans, 1891.

ever been communicated from horses to mankind, or *vice versa*, notwithstanding the great opportunities for such transmission, if such could be effected, which are offered in large horse establishments and in cavalry regiments."

This question was discussed at a meeting of the Lincolnshire Veterinary Association, in February, 1890, and there was a general expression of opinion that influenza did not spread from horses to man, and only one member expressed a different view, namely, that, to quote Captain Russell's own words: "Men may contract a similar complaint from the emanations or issues given off from the animal (horse.)" Let us see what positive evidence has been offered in support of the theory that influenza does spread from horses to man. The most careful and complete piece of evidence I have yet found is that recorded by Mr. Caird, of Lochgoilhead.* His account of the outbreak in his own words, is as follows:

"On January 2nd, 1890, two horses, aged respectively five and six years, were seized with influenza. The symptoms were as follows: short cough, profuse nasal discharge, nauseous breath, marked stiffness of joints, disinclination for food or drink; no lung complications; duration of illness about three weeks. . . . From January 9th, 1890, to February 10th, a dancing class was taught in the hay-loft above the stables. This loft was low in the roof, with deficient ventilation, and the infected stables below were in a most insanitary condition. There was direct communication between the mangers out of which the infected horses fed and the hay-loft, through which a current of air passed into the loft and contaminated the atmosphere. There were forty people at this school, mostly the children of shepherds, isolated from each other over an area of about four or five miles from the hay-loft where this class was held. There are only about a dozen families in the district, and owing to their pursuits in life and primitive habits, they have little communication with the outside world. There was no case of influenza in the district or anywhere near it, as far as I know, before February 1st, 1890. On that date, a person who was in continual contact with the horses, was seized with the disease. On February 2nd, his son and a neighbouring lad were attacked with influenza complicated with pleuro-pneumonia. . . . All the forty pupils in the dancing class suffered from well-marked influenza except seven. . . . At Lochgoilhead, about nine miles from Carindow, there were five or six mild sporadic cases after the epidemic at Carindow, but there were no other cases, to my knowledge, within ten miles of Carindow."

Mr. Caird's account of this outbreak is so circumstantial and recorded with such care, that it cannot be ignored.

The Local Government Report† on the epidemic of 1889 and 1890 contains some interesting information on the same subject. On page 262 of the Report a case is recorded in these words:—

"Mr. J. B. Gresswell, of Louth, has had a very large experience of horse influenza. Since the spring of 1888 it had persisted in Lincolnshire. He has known of its special prevalence in Grimsby and district. In August of 1889, Mr. Gresswell's four horses contracted the disease he says from some infected horses in a stable, the ventilators of which opened into his yard. Shortly after his own horses were taken ill he himself was taken suddenly ill. His temperature was found to be 102. He felt quite 'done up.' After a few days his acute symptoms subsided, and he resumed work, but had a relapse. This was followed for some months by great nervous depression, palpitation, and shortness of breath. His assistant, shortly after Mr. Gresswell's illness, was also attacked. He (Mr. Farr) describes his symptoms as at first consisting of headache, fever, great prostration, and a sensation of having been beaten all over. This attack came on quite suddenly, and he remembers great aching in his limbs. He had several relapses and suffered 'after-

* *Lancet*, 1891, vol. i., p. 741.
† London: Eyre & Spottiswoode

wards from shortness of breath and great palpitation. He did not finally get rid of his symptons till he had a complete change of air and rest from work. . . . Mr. G. and his assistant are confident that their ailment was taken from the horses, many animals besides Mr. G.'s own having suffered at the time; both the assistant and the principal were daily in contact with many infected animals. They were also greatly overworked."

These cases appear to be important. In August, 1889, it will be remembered there was, as far as is known no prevalence of influenza amongst men. The report goes on thus:—

"Mr. Gresswell says he remembers three other instances where persons engaged in waiting on infected horses developed the disease."

But of these cases the writer of the report justly points out that one is open to objection, because at the time human influenza was prevalent in the district. Of the other two cases no particulars are given.

In the same report a case is given in which a doctor believed his horse received the infection of influenza from the groom. The case is as follows:

"At Thirsk, Dr. R. Hartley informed me that both he and his groom had influenza (contracted from his patients) in December. Within a fortnight his best horse was unable to work and was pronounced to have 'influenza,' while his other two horses were amiss and had bad coughs. Dr. Hartley is of opinion that the horses contracted their illness from the groom. He did not know of horse-influenza existing in the locality at the time."

The next question is, Do dogs have Influenza? In his account of the epidemic, 1775, Dr. Fothergill wrote:*

"During this time horses and dogs were much affected; those especially that were well kept. The horses had severe coughs, were hot, forebore eating, and were long in recovering. Not many of them died that I heard of; but several dogs."

During the same epidemic, Dr. William Cumming,† of Dorchester, wrote:

"About the latter end of October, I remember to have heard that one gentleman had lost six dogs, in the usual manner that these animals are seized—a giddiness of the head, an inability to eat, with a paralytic affection of the hinder extremities."

And Dr. Thomas Glass, of Exeter, made a similar observation:

"In the month of September," he says, "many horses and dogs were severely afflicted with colds and coughs."

Dogs were also affected at Blandford, in Dorsetshire. Dr. R. Pulteney‡ wrote:

"I heard much of horses and dogs having been affected, before we heard of it among the human race."

Dr. Theophilus Thompson says, that during the epidemic of 1803, the dogs of Dublin suffered from sore eyes, and during the same year Mr. Richard Dunning,§ on the authority of Mr. Parsons, a farmer, near Modbury, says "dogs were generally affected with a disease, termed of them the Houst; which he observed, seems to consist of a continual effort to vomit, and that froth and slime were thrown up by these efforts in considerable quantities; many of these animals were ill several weeks, and many died."

In 1889 some careful observations were made by MM. Megnin and Veillon,‖ at Chantilly and l'Aveyron, and these gentlemen came to the conclusion that the infectious malady from which the animals were suffering was analogous to, if not identical with influenza.

More recently, Dr. Parsons and Dr. Bruce Low have collected evidence

* Medical Observations and Inquiries by a Society of Physicians in London. Vol. vi., 2nd edition, 1812, p. 346.
* Op. cit., p. 359.
† Op. cit., p. 402.
§ *Medical and Physiological Journal*, Vol. x., p. 137.
‖ Bulletin de l'Academie de Medicine, 3 S., Tome xxiii., p. 115.

which is in favour of the theory that dogs suffer from influenza. Those cases occurred in the Caistor Rural Sanitary District, Lincolnshire. The report contains the following passages:

"I have obtained information from three of the principal farmers of this village regarding the prevalence of 'influenza' among cats and dogs:—

"At the first farm, a valuable pet pug bitch was taken ill on December 2nd. Its symptoms were prostration, fever ending in diarrhœa; it took no food for three days, and then quickly recovered. Its playfellow, and also a pet of the house, was a kitten. This animal was taken ill just before the pug (about December 1st). It had similar symptoms to the pug, but had running from the eyes and nose; it recovered after a few days' illness."

In the second farm house, "at the beginning of December, a terrier dog who came into the house every day and played with the children was taken ill, sick, feverish, hot nose, very weak and listless. It recovered after a few days' illness. This terrier was also accustomed to visit with his master almost daily the house just mentioned, when the pug bitch was ill. At this date, the beginning of December, influenza was quite general among the people of the village."

At the third farmer's house, "early in December, a large retriever dog which ran about the yard and stables was noticed to be ill; it had a hard, dry cough, 'like that of an old man,' its nose and eyes ran, it was feverish, and looked very ill, it could hardly walk; its illness lasted only a week."

Do cats have Influenza? On this question the evidence is, perhaps, more complete, and at least two recent cases are on record, which are well worthy of consideration:—

"At a meeting of l'Academie de Medicine (Paris), on January 28th, 1889, M. Auguste Ollivier,* related a case which seemed to him to prove that influenza could be communicated to a cat by matter expectorated by a human subject. A lady had a violent attack of influenza, which was accompanied by the expectoration of much viscid mucus. As she was extremely feeble, and took food with difficulty, her doctor advised her to suck pieces of meat. She extruded from her mouth several morsels which she had chewed, when a cat seized upon them, and swallowed them. Three or four days later the animal died, having suffered from symptoms of influenza, namely, from cough, dyspnœa, and loss of flesh."†

The other case is given by Mr. Caird in the communication from which I have already quoted, and points to the horses as having been the source of infection. "The owner of the horses at Carindow," he says, "had three young cats, which frequented a hay-loft over the stables, where the horses were kept while suffering from influenza. These cats were often seen in the stables or about the stables, where the horses fed. They were soon seized with sneezing, cough, discharge from eyes and nose, were disinclined to take solid or liquid nourishment, and suffered from severe purging. One died, the others recovered."

The Local Government Board Report, to which I have already more than once referred, contains evidence in favour of the hypothesis that cats have influenza. At the farm at which the pug bitch and the kitten had the symptoms previously referred to, and "at the same time the groom's cat, which lived in the stable was taken ill much in the same way, but recovered. Owing to the swarms of rats which have lately multiplied so greatly in the locality, the farmer kept five cats in the yard. These did not enter the house, but would of course be in communication with the house cats. Three of the yard cats died after a short illness just before December 3rd, and the two

* Bulletin de l'Academie de Medicine, 3 S., Tome xiii., pp. 118, 119.

† Epidemic Influenza: Notes on its origin, and method of spread. Longmans, 1891.

‡ The value of this observation is not apparent. Those who are unacquainted with Dr. Parsons' report will not act fairly if they form an opinion on it simply by reading quotations from that part which refers to influenza in animals.

others just after this date. The farmer's groom asserts that he can recollect the names of persons who among them in the village lost 22 cats about the end of November and the early part of December. He further states that in his opinion there were others of which he had not heard.† At a farm one mile from this village, three cats died in December after a short illness, and at another farmhouse two miles off two more died in a similar way about the same time. All these people deny that poison could have killed the cats, since the farmers had forbidden the destruction of rats by poison, fearing that poisoned food might be devoured by their dogs, poultry, or other animals. Some also feared their children might touch the poison. In addition to the cats that died it is said that both in this village and those adjoining, many other cats were ill, but recovered."

At another farm "during the last week in November, the farmer's two children, two servants, and a cat were all taken ill with influenza. About the 1st of December, the groom's cat was also taken ill, it recovered, but the first cat died. Ten days later another cat, which was brought from a distance to fill the place of the deceased cat, was taken ill and died on the fourth day of its illness. Its symptoms were running from the eyes and nose, diarrhœa on the second day, fever and weakness. Latterly, it could not walk."

Sir Peter Eade, in the instructive letter which I received from him to-day, kindly gives me the following interesting information :—

"We know that (rightly or wrongly) influenza is said to attack horses. It may interest you to learn that a large pig farmer told me the other day that he was sure many of his hogs had recently had influenza. Those affected were seized with fever, panting and distressing cough, and then in two to four days the illness appeared to pass off, and they were well, except for a little cough which often remained a few days longer. One or two of them died."

Mention must be made of recent German researches on the bacteriology of influenza. Dr. R. Pfeiffer professes to have found the bacillus which causes influenza, and states that he has by inoculation given the disease to apes and to rabbits. These observations require confirmation. Leaving them for the present out of consideration, it seems, then, that there is no doubt whatever that horses, dogs, and cats suffer from a disease similar to, if not identical with, human influenza.

With regard to the infection of human beings from diseased horses, the cases recorded by Mr. Caird and by Mr. Greely seem to me to point strongly to the probability that such infection *may* take place, and I am also inclined to attach importance to Dr. Hartley's case, in which he believes his horse was infected by his groom.

In the case of cats, Mr. Ollivier's and Mr. Caird's cases are also of great interest, and such evidence cannot, I think, fairly be ignored.

In conclusion, let me say, the evidence at our present disposal seems to me to point to the fact, that, although the spread of influenza to man from animals, and from animals to man, is certainly not the usual one, that there is sufficient evidence that both these ways of infection may occur, to make the subject worthy of careful and thorough study.

THE INFLUENZA BACILLUS.

At a meeting of the Académie de Médecine on February 9th, Cornil and Chantemesse (*Sem. Méd.*, February 10th, 1892), gave an account of experiments which they had made in pursuance of the researches of Babes, Kovalsky, Pfeiffer, and Canon on influenza. They inoculated a drop of blood taken from a child suffering from influenza into a superficial vein in a rabbit's ear. The next day the blood of this rabbit contained microbes answering to the descriptions given by Babes and Pfeiffer; they were very small, more difficult to detect than those of rabbit septicæmia, because not so long, and stained with methylene blue and fuchsin in Ziehl's solution. Their length was

about one-twentieth of the diameter of a red blood corpuscle. The blood of the rabbit inoculated on sugared gelose yields characteristic cultures; the bloody streaks stretching along the surface of the gelose become bordered after twenty-four hours by a slightly transparent and opaline zone which, under a power of 100 diameters, is seen to be formed of very fine granules. These cultures, when examined with the microscope after staining, show micro-organisms similar to those found in the blood; they are free or in small clusters, or enclosed in tiny portions of gelose. With these cultures a second rabbit was inoculated, and from the blood of this animal bacilli of the same kind were recovered, cultures of which were made on sugared gelose. The bacillus is also easily cultivated in sugared bouillon. From the rabbit the virus was transferred to a large monkey, two drops of the bouillon culture being introduced into the nasal fossæ. Cornil and Chantemesse think it probable that the virus passed into the pharynx and was swallowed, for the symptoms of the disease developed in the monkey were extremely profuse diarrhœa, with pyrexia, prostration, and drowsiness, which lasted several days, the fever being followed by subnormal temperature. Similar bacilli were found in the sputa and in the blood of several patients suffering from influenza during the febrile period, and some days after subsidence of the fever. A third rabbit was inoculated (in one of the veins of the ear) with blood from a young woman who had been suffering from influenza for eight days, without other complication than fever, pains in the limbs, and cough. On the following day, the animal's temperature was found to be abnormally high, and, as in the case of the other two rabbits, there were numerous bacilli in the blood. Cornil and Chantemesse consider that these observations and experiments, confirming as they do those of Babes, Pfeiffer, and Canon, tend to show that influenza is an infectious disease caused by a bacterium peculiar in its shape. in its reaction to staining agents, and in its method of culture. The disease transmitted to the rabbit is not serious, though it lasts a considerable time. The animals become thin, lose appetite, and for two or three weeks their blood contains bacilli. If the most recent researches on the subject of the microbe of influenza are compared with the numerous bacteriological examinations made in previous years, it will (say the authors) be seen that complications of the disease by other maladies of microbic origin are very common, and that the influenzal infection predisposes to all these complications. The influenza bacillus is very difficult to detect, by reason of its extreme smallness and the difficulty of staining it. It can be cultivated slowly in gelose and sugared bouillon at a temperature of 37° C., but it is not easy to pass it through a series of cultures in artificial media. On gelose the culture at the end of twenty-four hours produces the appearance of a fine trail like a cloud of dew. In bouillon the culture is scarcely distinguishable with the naked eye; the medium preserves its transparency, and is only stndded with very fine granules. Cornil and Chantemesse conclude by saying that the hope may be entertained that the discovery of the influenza bacillus will lead to a notable advance in our knowledge respecting the diagnosis, prophylaxis, and treatment of the disease.

C. Bareggi, of the laboratory of the Ospedale Maggiore, at Milan (*Gass. Med. Lomb.*, January 16th, 1892), states that on December 17th, 1891, he had already independently discovered bacilli similar to those afterwards described by Pfeiffer, in examining sputa from a case of pleuro-pneumonia under the care of Dr. Remo Segré. Under the microscope, after staining with Ziehl's solution, six kinds of micro-organisms were seen, four of these being of common occurrence in such sputa, and a fifth presenting the characters of Fränkel's diplococcus. In addition to these there were numerous very small bacilli, resembling those of diphtheria, but only one-fourth of its length and thickness; they were less deeply stained than the other micro-organisms, and were isolated or grouped together in stellate fashion or arranged in chains. On

comparing these preparations with others of ordinary pneumonic sputum made during the winter of 1890-91, when no case of influenza occurred at Milan, Bareggi could see in the latter no trace of the tiny bacillus which was present in such large numbers in the former. Being himself attacked by influenza almost immediately afterwards, and finding the same bacillus in his expectoration, it occurred to him that it might have a causative relation to the disease. He did not, however, succeed in obtaining pure cultures of the bacillus. After learning the details of Pfeiffer's discovery, Bareggi examined the sputa in a number of cases of pneumonia and bronchitis following influenza, and in all of them the bacillus described by the German bacteriologist was present in greater or less abundance. In the pneumonia cases it was accompanied by Fränkel's diplococcus, while in the bronchitis cases there was a large number of the microbes ordinarily found in sputum, chiefly micrococci of various sizes and a kind of bacillus considerably larger than Pfeiffer's, and often arranged in long chains. On the other hand, in sputum from cases of ordinary chronic bronchitis and pulmonary tuberculosis, Pfeiffer's bacillus was never found. Bareggi therefore agrees with Pfeiffer in stating that the bacillus discovered by the latter is always found in sputum from cases of influenza (whether simple laryngo-tracheitis, tracheo-bronchitis or pneumonia), and never in sputum from cases of other broncho-pulmonary diseases.

A. Bruschettini, as the result of researches made in Professor G. Tizzoni's laboratory at Bologna, confirms (*Rif. Med.*, January 29th, 1892) Canon's observations as to the constant presence in the blood of patients suffering from influenza in the acute stage, of bacilli similar to those described by Pfeiffer. As to the morphological character of these bacilli, he says he has nothing to add to the statements of Pfeiffer, Kitasato, and Canon. The blood was in every case drawn, to the amount of 5 to 10 cubic centimetres, from one of the veins in the bend of the arm, the time chosen being as near as possible to the maximum point of the fever. The blood was then placed in sterilised tubes in an incubator at 37° C., and after having been kept there for five or six days, a rich culture of the micro-organisms was obtained, which was then easily transferred to artificial nutrient media, where it grew very luxuriantly. Bruschettini states that in the blood Pfeiffer's bacillus is never accompanied by other micro-organisms, and it can therefore be obtained in pure cultures directly from that fluid. Human blood drawn from the veins is an excellent medium for the culture of these bacilli, which multiply abundantly therein. In a further communication, Bruschettini proposes to deal with the biological characters of the micro-organism, and with its pathogenic actions on animals.—*British Medical Journal.*

INFECTIOUS ABORTION IN MARES.

ALLUSION has been made in this journal to a serious epizoöty of infectious abortion of mares in the United States of America. In the Report of the Bureau of Animal Industry, just issued, there is a record of investigations thereon by Dr. W. L. Williams, which possesses some interest.

Alluding to the history of such occurrences and their comparative rarity in the equine species, he states that the outbreak prevailed on this occasion from November, 1890, to March, 1891; and referring to previous outbreaks he admits there is little to show from what time and to what extent the disease has prevailed among the live stock of the United States, but it has evidently been frequently seen from an early date among cows, and more rarely among ewes.

"The prevalence of abortion among mares in this country appears to be of much more recent date. It has only been during the past eight or ten years that it has prevailed extensively in the Mississippi Valley, but in this brief period it has proved a veritable scourge to horse-breeders. It first engaged general attention about 1866, gradually increasing in virulence until it reached

its climax in 1889 and 1890. It is exceedingly difficult to estimate with any degree of accuracy the losses from this scourge in a given area, but it was certainly quite enormous.

"In McLean County, Ill., one of the richest draught-horse breeding districts in America, there were reported for the year 1888 five thousand living foals, and it is quite safe to say that, apart from other causes of loss, not less than one-half as many foals perished from infectious abortion as lived. In several townships where horse-breeding constitutes one of the principal agricultural pursuits, the losses from this malady alone reached fully 75 per cent., while in other more fortunate townships the disease was comparatively rare or wholly unknown. Other horse-rearing areas in Illinois and adjoining States have suffered similarly.

"The disease has quite naturally attracted the most attention, and probably found the most favourable habitat, on extensive breeding farms, where large numbers of highly-bred mares are kept solely for breeding purposes. In such herds it has proved a very serious scourge, not unfrequently causing a total loss of foals for one or more years, producing occasionally diseases or sequelæ (metritis, obesity, etc.), which prevent future conception, and in some instances cause the death of the mare.

"Little of value has been recorded in connection with this disease as it appears in mares; and, in fact, the observations and experiments with it in cows and ewes are in most respects quite meagre and indefinite.

"These observations in relation to the disease in cows and ewes are rendered of still less value by the fact, that there is no evidence of identity of the infectious abortion of mares, cows, and ewes; but, on the contrary, recorded clinical observations are strongly opposed to such conclusions. For although abortion has frequently ranged over a wide area in one species of animal which was habitually associated with other species on the same farms—with the same food, water, housing, and other environments—yet it appears that the disease has not been simultaneously observed in two different species in the same community. We are constantly forced to the conclusion, in our present state of knowledge, that while infectious abortion as it appears in the different species of domestic animals is clearly analogous, or generically identical, it is specifically distinct. In our investigations, therefore, we could be guided only by such inferences as are drawn from the imperfect observations and experiments recorded in relation to the abortion of cows and ewes."

He quotes the opinion of Fleming, Franck, Nocard, Labat, and others, and then goes on to state that with this knowledge of the malady the study of this outbreak was undertaken.

"The protracted and widespread prevalence of the disease in Central Illinois led us to suppose that abundant material of undoubted virulence and reliability could be readily obtained close at hand—a presumption which was not, however, supported by subsequent developments. Several outbreaks of an apparently reliable character occurred in October, 1890. One of these, upon which we had largely relied for material for our experiments, was in the herd of Mr. W. Strawn, who had on his farm twenty-three supposedly pregnant, mostly full-blood and high-class, French draught-mares. Several of the more choice individuals had been exhibited at a fair on September 1st to 5th, and on September 24th one of these—a four-year-old mare—aborted, followed on the next day by a three-year-old. No further accidents occurred until October 18th, when other abortions followed, until by October 23rd there had been, to Mr. Strawn's positive knowledge, not less than seven abortions—all being full-blood mares and of the number exhibited at the fair. At this stage prophylaxis was attempted by the attending veterinarian, by means of general and local disinfection, and with the result that no further losses occurred. These mares were kept on luxuriant, well-drained, blue grass pasture, and had plenty of pure well water. Other similar outbreaks, from which it was hoped to

obtain material, were located about the same date, but most of them ceased as abruptly as the above.

"There were purchased, as experimental animals, one Texas mare brought to Illinois in 1889, which had raised a healthy foal in 1890 by a native stallion, and was again in foal by the same sire; and sixteen unbroken Texas mares (three of which were later returned to the seller as barren), brought direct from that State from a herd free from abortion. The experiments were conducted in the City of Bloomington, on premises suitably equipped with box stalls and the animals were supplied with abundant light, air, food, and water for the maintenance of health, and were under constant observation." The experiments consisted in the introduction of portions of aborted placenta and discharges into the vagina, leaving placentas and aborted foals in the stalls, and allowing cohabitation of mares just aborted with pregnant mares.

Eleven mares were thus experimented upon; one of them proved to be barren, one aborted accidentally from violence, another died from epilepsy, one aborted evidently from infection, but with the others there was no result.

Dr. Williams describes several interesting outbreaks for which no cause but infection could be assigned. Alluding to all his experiments at the conclusion of his report, he says: "Regardless of these negative results, it seems impossible to avoid the conclusion that there is a true infectious abortion among mares. The outbreaks already cited present strong clinical evidence on this point, and many more outbreaks might be cited prior to the beginning of our work, in which the origin of the disease was distinctly traceable to the introduction into a herd of a pregnant mare from a farm where the disease existed.

"Breed, food, water, stabling, work, or other environments exert no visible effect on the origin, course, or termination of the malady. Horse-breeding in central Illinois is largely devoted to heavy draught-horses, but occasional mares of lighter breeds associated with herds of draught horses show no immunity, and the few herds of trotting-bred mares kept in this locality are as prone to suffer as the heavy draught.

"The food allowed breeding animals in central Illinois is quite uniformly of a high class, and liberal in amount; and the disease occurs alike on first-class blue grass, clover, or timothy pasture, or cornstalks, or still later in the season, when fed exclusively on grain and hay of the best quality, and either allowed to run at large or comfortably housed.

"The period of gestation seems to be without material influence. In the summer of 1889 abortion broke out in the herd of Mr. Danforth, of Washington, Ill., consisting of full-blooded Clyde and high-bred trotting stock. The first notice taken of anything being wrong was the return of œstrum in mares supposedly two or three months pregnant; and the mares being at pasture, the expelled fœtuses escaped detection, until in some the period of gestation had considerably advanced, when the size of the fœtuses led to the discovery that abortion was rife in the herd. It appears certain, from this and similar instances, that infectious abortion may originate at any stage of pregnancy, although in the earlier periods the expulsion of the fœtus is likely to be overlooked by the breeder.

"The meagreness or positive results in our experiments is not readily explainable. From the first the outbreaks of the disease upon which we relied for material were very few in number, in spite of diligent search, and in those found the usual virulence seemed to be wanting, although evidently of the infectious type. Except in the C. Yoder outbreak, the malady abruptly disappeared when a loss of little more than 50 per cent. had been reached. During the period of experimentation the weather was unprecedentedly warm, clear, and dry, rendering it practicable for mares to remain on pasture or in cornstalk fields—thus avoiding their close crowding in stables, a well-recognised factor in promoting the virulence and spread of infectious disorders.

"The rarity and benignity of the disease was more likely due to one of those

periodic remissions so common in most infectious disorders, the causes of which are not well understood. In addition to these considerations, there is one more possibly quite important factor which may have defeated our purposes. With one exception, all exposures were made some time after the process of abortion was complete. In those instances where mere cohabitation was relied upon, no abortions occurred while experiment mares were in the affected herds. In the present state of our knowledge we cannot estimate the effect of this condition. In most, if not all of those cases in which the disease has been clinically traced from an affected to a healthy herd, the bearer has been a pregnant mare which has aborted later. Can it be that the virulence of the disease ceases immediately after the abortion is complete?

"The abundant negative results have served well to contradict the popular belief that the presence of non-infectious freshly aborted, or of putrid fœtuses and membranes, or of recently aborted animals, is fraught with great danger to pregnant mares, or that such conditions are sufficient to generate infectious or epizootic abortion. The direct insertion into the vaginæ of pregnant mares, of putrid utero-vaginal discharges, placenta, etc., has likewise been shown to be free from danger to the life of the fœtus. It has also been learned that the danger to the life of the fœtus from manual exploration of the vagina has been greatly over-estimated."

FORMULÆ.

For Tape-worm in Dogs.

In a recent discussion at the *Académie de Médécine* of Paris, Dr. Laborde drew attention to the anthelmintic action of the Salts of Strontium, and has communicated the following formulæ for tape-worm in dogs:

Phosphate of Strontium, 2½ to 5½ drams daily, according to the size of the animal. To be mixed with the food.

As the phosphate is not very soluble, if a solution is desired, a lactate of tartarate may be employed.

Lactate or tartarate of strontium	14 drams.
Pure water	11 ounces.

Add a little glycerine to the solution.

Two spoonsful to be given by the mouth daily. In about five or six days all the tæniæ are expelled.

For Grease.

Finely powdered sulphate of copper	5 parts
Iodoform	15 „
Starch flour	100 „

This may be applied with or without a bandage after all the diseased surface has been well cleansed.

For Diarrhœa in Calves.

Calomel	2 centigrammes
Salicylic acid	50 „

To be given in a spoonful of milk twice a-day until the diarrhœa has ceased, when it generally does in three or four days.

For Follicular Scabies in the Dog.

Sozoiodol of mercury	3 drams.
Vaselin	4 ounces.

Two rubbings are sufficient.

CASE OF LEUKÆMIA IN A HORSE.*

BY ARMY VETERINARY-SURGEON REINLANDER, GERMAN ARMY.

THE subject was an eight-year-old horse which had previously shown no symptoms of disease. One day it appeared to be languid, exhausted, and somewhat giddy; the pulse was 68 per minute and regular, and the respirations 30, but shallow. The visible mucous membranes were of a greyish-yellow colour, and the temperature was 40·1 C. (104° Fahr.). On the following day the pulse, respiration, and temperature were somewhat increased, and on the succeeding day these symptoms were exaggerated and the animal was weaker. The mucous membranes were anæmic, and œdematous swellings appeared on the breast and abdomen.

The animal died on the same day, and the autopsy revealed the following alterations:—

The abdominal cavity contained 15 litres of a sero-sanguineous fluid. The liver occupied the anterior portion of the cavity, and completely hid the neighbouring viscera from view. The lymph-glands of the colon and cæcum varied in size from that of the fist to a hen's egg, and greyish-red nodules were distributed throughout the omentum. The enlarged lymph-glands were soft to the touch, and on section the parenchyma was seen to be of a greyish-white colour, the interstitial portion being greyish-red, while the cut surface showed patches of a greyish-red and dark-red tint. The mucous membrane of the stomach was normal, but that of the small intestine was of a milky greyish-red hue. In the cæcum and colon were numerous hæmorrhagic infiltrations about the size of a silver groschen (sixpence). The cavities of the before-mentioned nodules communicated with the interior of the intestine by small openings.

The liver weighed 84 pounds; it was 7 inches thick and $34\frac{1}{8}$ broad. It was of a reddish-brown colour and friable, and its cut surface exhibited a condition similar to that of the lymph-glands. Numerous greyish-yellow nodules were present in the liver tissue; these were about the size of a pin's head. The lobuli of the organ could not be recognised. Besides these changes, cavities were noticed, the outlines of which were grey, passing to dark-red.

The spleen was swollen, and was 18 inches long by $13\frac{3}{4}$ broad, while its thickness was $1\frac{1}{2}$ inch. It was of a greyish-blue colour, the splenic corpuscles being the size of a millet seed. Both kidneys were enlarged, softened, and greyish-yellow streaks extended through them from the papillæ to the cortex, which was of a greyish-brown hue. The pelves of the kidneys contained a slimy, pus-like secretion.

The bronchial and submaxillary lymph-glands were greatly enlarged.

In veterinary literature no similar case of leukæmia infiltration of the liver is to be found, and the great enlargement of the organ no doubt caused suffocation. There was dulness on percussion of the posterior part of the thorax during the animal's lifetime.

FOOT-AND-MOUTH DISEASE.

OUTBREAKS of this epizoöty have continued in various parts of the United Kingdom, some of them very far apart from each other. These have occurred in Kent, Sussex, Essex, Forfarshire, Glasgow, Paisley, Westmoreland, Edinburgh and Roslin, Yorkshire, Chester, and in several parts of Middlesex. Grave inconvenience and heavy loss is incurred, not so much from the disease itself, as from the measures enforced to stop the plague. Beside these, the Agricultural Department of the Privy Council has asked for a special grant of £15,000 to meet the expenses necessary to carry out the suppressive measures. The origin of some of the outbreaks cannot be traced. Denmark remains free from the malady.

* Translated from the Zeitschrift fur Veterinaar Kunde, IV., 2, by Professor T. BOWHILL, F.R.C.V.S.

DITHION.

The New Remedy for Foot-and-Mouth Disease.

In a communication to a recent number of the *Berliner Thieraerztlichen Wochenschrift*, Dr. Renner, District Veterinary Surgeon, Dieburg, supplements previous observations on the value of the dithio preparations by further details of considerable value. He says:—

The two dithio preparations named were used by me in the years 1890 and 1891 on the large scale, during an extensive outbreak of foot-and-mouth disease. Primarily, they were used externally, those parts of the animals where pustules had formed, and inflammatory processes set in—the mouths, udders, feet, and hoofs—being painted every three hours with a 2½ to 5 per cent. solution, washed and bandaged. The pustules disappeared so rapidly that in two or three days a perfect cure was attained. Cracking of the nipples or scaling of the udders is rare, the solution varnishes over all the wounded places, so that they are at once rendered aseptic and forced to heal. Malignant suppuration or loss of the hoofs—sequelæ of the disease which often render necessary the slaughtering of the animals—was not at all met with.

Although the external application of the remedy in foot-and-mouth disease had yielded such excellent results, yet I was not satisfied, but also felt a desire to try the preparation internally.

This was suggested to me by the statements of Professor Rosenbach, in Breslau, who showed that, like all salicylate preparations, these dithions distribute themselves through all the tissues, and so render possible a thorough disinfection of the whole body. The success of the treatment was simply wonderful, for in many experiments the ruminants were mostly protected against the disease, and those attacked rapidly recovered without serious injury.

Baron von W——, in J——, had seventy-five head of cattle, to which, on the outbreak of the foot-and-mouth disease, the dithio preparations were given internally, 1 to 2 ounces daily in the food, and applied externally in 2½ to 5 per cent. solutions; the greater part of the milch cows did not sicken, or only slightly. The bulls in the fourth stall and the swine were not affected at all. Encouraged by these favourable results, I have resorted to the preparation in six other places with extraordinary success, though the animals were most variously stalled.

The farmers, etc., were always satisfied, and unanimous in their praise of the two remedies. The only complaint was as to their costliness. The natural consequence was that great opposition was met with, and the preparations could only be used for the medium and smaller cattle rearers.

Very often I tried to introduce the dithio preparations into dairy farms where twenty to thirty milch cows were kept, but the whole plan failed on account of the large outlay. Some of these cattle-holders have suffered a loss of £150 to £200 in consequence of the disease, and, manifestly, it would have been financially wiser to have laid out £15 to £20 for such a remedy, in order to have protected the animals from the loss of hoofs, malignant suppuration of the udders, and even death brought about by the disease.

I have known various places in which seventy and eighty cattle-stables were attacked by the disease, and where the damage to property was simply enormous. If I had had an opportunity of using these preparations to which I refer, heavy loss and grave mischief might have been prevented.

This difficulty as to the price has been the cause of much concern, not only to me, but also to the discoverer of the dithio preparations, H. Baum, Frankfort. At length the latter succeeded in making a preparation, which, while possessing the valuable properties of both substances, is much cheaper. It is put upon the market by the firm Dr. F. von Heyden Nachfolger, Radebeul, near Dresden, at nearly one-fourth of the previous price.

This article, called "Dithion," I have used in two places in the village of G——, on the cattle in two stables here, and lastly on the 47 head of cattle belonging to Mr. F——, farmer in D——. In the first four places, which were already infected by the time I was called in, I applied the preparation internally and externally in the same manner as already described, with the splendid result that in five to six days the animals were freed from the disease. In the same yards there was a great number of swine, in sties very little or not at all separated from the cattle sheds. These animals were given the dithion in their drink in the proportion of 1½ drachms per head; they remained perfectly free from the disease.

But the contagion did not spread from the particular yards affected, but was annihilated. At Mr. F——'s, in D——, seven cows in the most widely separated parts of the farm were attacked when I was sent for. There were altogether 47 head of cattle—40 milch cows and seven young bullocks. I had the whole herd of apparently healthy animals at once inoculated, which was done by rubbing their mouths with a soft cloth, with which the mouths of the affected animals had been wiped out. Further, the food and drink which the infected cows refused for a time was taken out of the mangers, mixed with fresh drink, and given to the healthy animals. In these ways the transference of the contagion was made certain. The owner, at my suggestion, did not shrink from the expense of ordering and using 8 to 12 lbs. of the dithion, which was given in the drink in the quantities already named, and readily taken by the cattle. The greater part of the cows were very slightly attacked, and the young oxen not at all; the swine also were not affected. When, five to six days later, I inspected these animals once more, there was only one here and there that still had pustules on the udders, which were washed every three hours with five per cent. dithion solution, and rapidly healed up.

Not only was no animal lost or even cast its hoofs, but the whole herd had passed through and recovered from the contagion in about twelve days. The same farmer had the disease amongst his cattle in the previous year, and suffered a loss from it of about £200; a fifth of the animals died or had to be killed, apart from the loss due to the falling off in the milk produced. If it be borne in mind that through the procuring of 8 to 12 lbs. of dithion, at a cost of roundly £5, a loss of hundreds was averted, it must be acknowledged that the use of dithion on outbreaks of foot-and-mouth disease is decidedly beneficial. I am even firmly convinced that if the preparation had been resorted to three to four days earlier, the greater part of the cattle would not have been attacked by the contagion, which did not spread beyond this farm, although other large herds of cattle were kept in the immediate neighbourhood, and the transference of the disease was much facilitated by the fact that the farm servants freely mixed among each other.

It is therefore shown that dithion, if used betimes, protects from the foot-and-mouth disease, diminishes its intensity when already broken out, reduces the losses, and restricts the attack to the affected herd.

I have also used the dithio preparation in the stables of the Boys' College in Kl—— Z——, where there are seven horses, of which five were seized with the disease, and two remained healthy. Of the five, two young animals died, and one of those which survived was severely ill, not days, but weeks, and had almost continually a temperature of 42 deg. C. At the same time the animal was naturally very malicious, and would not take either liquids or solids through the mouth, so that it was given two to three ounces of dithion daily in lukewarm aqueous solution per rectum. Finally, the temperature fell to 37 deg. C., and the horse recovered. After this experience the other two animals were also treated with dithion and recovered.

External Application.

While the action of carbolic acid, salicylic acid, lysol, creolin, etc., may be

looked upon as generally known, it may be pointed out that dithion in the most various forms of application—ointment, dusting powder, etc., pure, or in combination, of 2½ to 5 per cent. solutions—has a better action, and gives more promise of success, than the former remedies in mange, tetter, and in skin diseases generally. The ointments are made with vaseline, and of the strength 2½ to 5 per cent.; the dusting powder consists of equal parts of the remedy and of starch powder. Dithion dissolves in water readily to a clear liquid.

To these statements respecting the value of dithion in foot-and-mouth disease, the following personal experience of a farmer may be added. It appears in the *D. Reichs-Anzeiger und K. Preuss. Staats-Anzeiger* of the 29th January, 1892 (supplement ii. page 4), under the head of Sanitary Matters, Veterinary Diseases, etc.

Dithion in Foot-and-Mouth Disease.

The *Neue Hessische Volksblätter*, of the 13th January, 1892, contains the following important communication with respect to cattle-rearing :—

FROM THE ODENWALD.—In spite of all preventive measures and of isolation, foot-and-mouth disease has again made its appearance amongst cattle in different districts. The farmer will therefore readily welcome a preparation that has been employed in this disease with very great success. About a year ago I lost several cows by this pestilence, and was therefore much alarmed when I discovered, on the 14th December, that the infection had again been introduced into my stables, containing 42 milch cows and several bullocks, by means of a cow recently purchased from a cattle-dealer. By good fortune I met, on the following day, Mr. Renner, the district veterinary physician from Dieburg. He advised me to give each one of the animals 100 grammes *Dithion* (sodium dithiosalicylate). Before the arrival of the medicament, which was obtained of Dr. F. von Heyden Nachfolger, in Radebeul, near Dresden, 25 milch cows were attacked by the disease. The method of administration is simple, the preparation in the form of a powder being dissolved in water, and a part of the solution used to wash the mouth, hoofs, and udders of the sick animals, whilst the greater portion was mixed with the drink, which was readily partaken of. The effect was beneficial, as all the cows recovered rapidly and easily from the disease, whilst the bullocks, which were slightly separated from the cows, were not attacked. In only a few cases, a slight inflammation of the hoofs was observed, and fourteen days after the outbreak all the animals in the stall presented a healthy and lively appearance. From my own experience with the preparation I would recommend others to employ it under similar circumstances.

We are informed that this remedy is sold in London by Burgoyne, Burbidges, Cyriax, and Farries, 12 and 16, Coleman Street, E.C.

THE PRESENCE OF GLANDERS IN GREAT BRITAIN.

THERE is only one serious disease of horses which is communicable to man, and which for this reason, if for no other, we have an interest in seeing diminished or suppressed. This is the specific eruptive fever called "glanders." Though it has been known as affecting solipeds from the earliest times, yet, strange to say, it was not until this century was well advanced that its transmissibility to the human species was discovered; and in this direction the observations of Elliotson in this country, and Rayer in France, were of greatest importance. Their conclusions have since received ample corroboration, and now it is a well-recognised fact amongst medical men and veterinarians that the malady can be conveyed to man, and in a more or less virulent dangerous form. In him it is not invariably fatal, as it is in the horse sooner or later, for cases of recovery in the human subject are on record; but it is, nevertheless,

a very grave disorder, and the prognosis must be always doubtful and serious Though special to equines, it can be conveyed to many other species of creatures besides man, the ass being particularly susceptible, and the ox altogether insusceptible.

Glanders is very much less prevalent than formerly. In the pre-railway days, when horses were so extensively employed in road traffic of all kinds, it was a veritable plague, and there were few stables in which it did not exist. Horses suffering from it were regularly worked, and in the cavalry and artillery corps it was extremely rife. It occasioned great losses in horse establishments. and there can scarcely be a doubt that many people must have died from it, though its nature in them was not suspected. Indeed, its contagiousness in horses was not universally recognised until the beginning of this century in England; while in France it was only about the middle of the century that chronic glanders was acknowledged to be transmissible from horse to horse. As a consequence, precautions were seldom adopted to check the contagion, and curative measures were usually preferred to those of a preventive kind. It was also supposed to be of spontaneous origin, and ascribed to all sorts of influences. But, with the progress of veterinary medicine and better notions of horse sanitation, a great change has been effected in the prevalence of glanders. It has been for some years banished from our military stables, and only exists to any considerable extent in some of our large cities, while believers in its spontaneity must be few indeed, and are certainly out of date.

It may, however, be considered doubtful whether all the cases that occur are reported; as, though this is one of the disorders included in the Contagious Diseases (Animals) Act, yet there is reason to think that, from the way in which it is dealt with, it is more prevalent than the annual reports issued by the Government will lead us to believe. However this may be, it would appear that in 1891 only 1,357 outbreaks were reported for Great Britain, though this number was much in excess of that in 1890, when it was 937; in the former year the number of horses involved in these outbreaks was 2,315, and 2,064 of these were in London.

Of late years there has been a gradual increase in the proportion of outbreaks, and it is probable this will go on until the law relating to glanders is amended and more rigorously carried into operation. There is no reason whatever why it should not be exanguished and kept out of the country, provided always that infected horses are not allowed to be imported. One reason why the malady has not been extinguished or reduced to very much smaller dimensions than at present, may be found in the circumstance that, in the Act, glanders and farcy are spoken of and prescribed for as if they were different diseases, whereas they are one and the same, farcy being merely an outward or cutaneous manifestation of the disorder. In the days of farriery, glanders was one disease, farcy was another, and each was submitted to its own kind of treatment; but modern veterinary medicine recognises no distinction, farcy being merely external or skin glanders. This mistake in the Act has had a mischievous effect in perpetuating the disease, as it has recognised a difference in the sanitary police measures applicable to it; for the authorities who carry out these measures are only allowed to kill horses which are glandered, while those affected with farcy may be permitted to live, though they are just as dangerous to other horses. It is somewhat extraordinary that the law has not been amended long ago, and this obsolete notion got rid of; as it can scarcely be doubted that it is chiefly to blame for the maintenance and extension of glanders. Another weak point in the Act, and one for which there can be no tangible reason, is the long lapse that must take place—twenty-one days—after a horse has been declared affected, before it can be lawfully slaughtered, though it may be so situated as to endanger the lives of many other horses during that time. The Act should be amended, and brought into harmony with present knowledge of the malady, especially in

view of the increasing prevalence of glanders; and as it exists in only a few centres it ought to be easily extirpated from them. It does not require the severe measures which are now in force with regard to bovine contagious pleuro-pneumonia; indeed, they could not be imposed without great hardship. When a case of that malady is discovered on a farm or in a dairy, no matter how many the stock may be, all are slaughtered and the place is declared infected. Glanders exists chiefly in large studs of horses; to kill all these because one case of disease was detected would be most serious and quite uncalled for. It was not in this way that the army was freed from glanders, but by careful inspection, isolation, and destruction of those discovered to be diseased. In contagious pleuro-pneumonia compensation is allowed for the healthy cattle which are destroyed; in dealing with glanders this should not be necessary, for several reasons, but particularly because healthy horses should not be killed, and there are certain inoculation tests that can be resorted to in the case of those which present suspicious symptoms. The principle of compensation is liable to abuse, and there would be the greatest tendency to this if it were applied to glanders. It should be made the interest of the owner to rid his stables of the disease as quickly as possible; to give him a monetary interest in having it on his premises would lead to remissness, and in some cases probably to fraud.

It must not be overlooked that so long as horses are imported from countries in which glanders is present—and there are none in our hemisphere in which it does not exist—we shall always be exposed to its reappearance after it is stamped out, unless the entrance of these horses is entirely prohibited, as cattle now are from infected regions. And even then, in case of a Continental war, our mounted corps, though taking the field with a clean bill of health, would not remain free for long; as remount horses must be purchased in other countries, and, as during the Crimean War, these would carry infection with them. The question of glanders, of course, interests everyone more or less; but the fact that it can be conveyed from diseased horses to mankind endows it with a special interest for members of the medical profession, and this will be greatly increased if horseflesh ever comes into use for human consumption in England, as it has done in nearly every European country.—*The Lancet.*

THE LATE INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

On March 25th, the Members of the Committees, the Presidents, Vice-Presidents, and honorary secretaries of sections of the International Congress of Hygiene and Demography entertained Sir Douglas Gatton, Sir Spencer Wells, and other organising officials of the late Congress at a dinner given in the Hôtel Metropole, London. The veterinary profession was represented by Veterinary-Colonel Lambert, C.B., Veterinary-Captain F. Smith, and Dr. Fleming, C.B.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

THE ROYAL COLLEGE OF VETERINARY SURGEONS.

A PROTEST has been laid before the Privy Council, against granting a supplemental Charter to the Royal College, on the ground that such Charter is contrary to the true intent and meaning of the Veterinary Surgeon's Act of 1881, which settled the status and rights; (*a*) Existing Practitioners of Veterinary Surgery; (*b*) Members of the Royal College of Veterinary Surgeons; (*c*) Fellows of the Royal College of Veterinary Surgeons. The protest also extends to alterations in the Act and Royal Charters, unless those interested are consulted; and also to the sum of £6,891 3*s*., contributed by Existing Practitioners and Fellows, being applied to any other purpose than that of providing funds to enable the Fellows aud Existing Practitioners to take means to maintain their rights. A meeting of Council was held yesterday to consider this protest.

ROYAL VETERINARY COLLEGE, VETERINARY MEDICAL ASSOCIATION.

THE 157th Ordinary General Meeting of the above Association was held at the College on February 10th, 1892, Mr. H. Stapley in the Chair.

Mr. ROGERSON, F.R.C.V.S., introduced a large collection of very interesting and carefully prepared specimens of Horses' teeth, showing the variations presented by the marks, and clearly indicating that certainty in ascertaining the ages by dentition is impossible after six years of age. He kindly offered to present his valuable collection, provided the Association had a museum, which unfortunately is not the case. Great interest was shown by the Members, who thoroughly appreciated Mr. Rogerson's kindness, a hearty vote of thanks being unanimously carried, on the proposition of Prof. McQueen, seconded by Mr. Reynolds.

Post-mortem specimens taken from an animal suffering from foot-and-mouth disease were also shown; the lesions on the tongue, lips, and feet being especially manifest.

Mr. F. W. WILSON then read an essay entitled "Notes on Tetanus." Commencing with a general outline of the various forms of the disease, the Essayist went on to describe the symptoms, laying special stress on the condition known as "trismus." This term is applied when the muscles of the head and neck are those most severely affected; the animal shows difficulty in swallowing, being unable to open the mouth. When the head is raised the membrana nictitans is protruded over the eyeball. The patient is very sensitive, will shrink from the slightest touch, a cold perspiration being noticeable all over the body. The special microbe which causes the disease was discovered by Nicolaier in 1884; more of its history has, however, been obtained by the researches of Kitasato, who worked under Dr. Koch. As regards treatment, nearly all the drugs in the pharmacopœia have been tried with but indifferent success. The main principle seems to be to keep the animal thoroughly quiet; if near a road or noise of any kind, to plug the ears with cotton wool, and use peat moss or sawdust in preference to straw for bedding. Mr. Wilson here gave the clinical notes of two cases which occurred in the College Infirmary during the last week of January, both of which terminated fatally, one being idiopatic, the other traumatic.

The *Post-mortem* of Case No. 1 revealed several ulcers in the cuticular portion of the stomach due to the strongylus axii. The heart showed vegetations on the valves. All the other organs were healthy.

In case No. 2 the *Post-mortem* revealed the immediate cause of death to be

rupture of the mesentery. The small intestines were congested. There were a large number of worms, the ascaris megalocephala, in both the large and small intestines. In the discussion which ensued :—

Mr. WILD mentioned a case of tetanus occurring in a bitch 48 hours after parturition.

Mr. ROGERSON stated that he had a case in his infirmary, which is situated quite close to that part of the college where the above-mentioned cases were placed during the same week.

Mr. SCOTT mentioned two cases of tetanus, due to punctured feet, which had recovered after the patient had been unnerved.

Mr. FARRANT instanced three cases successfully treated by chlorodyne and cannibas indica.

Mr. PEELE recorded a case of tetanus in the ox, due to the horn having been broken off.

Votes of thanks to the Essayist and Chairman brought the meeting to a close.

F. HOBDAY, *Assistant Secretary.*

The 158th Meeting was held in the Theatre of the College on February 17th, Mr. G. W. Lamb in the Chair.

The PRESIDENT introduced a specimen of a horse's hock, showing the condition known as "external spavin."

Mr. WIDDEN read an essay on "Some abnormal Conditions of Milk." In commencing, the Essayist referred to the frequency with which the veterinary surgeon is called upon to give an opinion regarding alterations which take place in milk. He described the various causes under the heads of Irrational Feeding, Constitutional Disorders, Local Diseases (as of the udder), Infective influences, and influences of a thermal, chemical or electrical character. He then went on to speak of the various conditions in which milk is found, the first commented upon being that of "shrinking." This is one of the first symptoms of gastric and intestinal affections. The causes are various—may be the result of medicinal agents, change of milker, sucking its own teats, etc. The treatment consists of removing the cause, giving highly nutritive diet and certain drugs such as juniper berries, dill, aniseed, plo-carpne. Poor milk, which has a bluish tint and is characterised by the small proportion of fat and casein it contains; this is usually due to inferior feeding and may be remedied by good diet, together with tonics and stomachics. Rapidly curdling milk is often due to mammitis. "Milk which yields little or no butter" due to inferior feeding, and often noticeable when the period of gestation is far advanced. As a remedy for this Dr. Harms recommends 50—100 grammes of calcium carbonate administered three times daily. After a brief reference to "stringy" and "putrid" milk, the Essayist went on to describe "blue" milk, due to the bacillus syncyanus; "red" milk, said by Schröter to be due to the bacillus prodigiosus; and "yellow" milk, due to the presence of bacillus synxanthus. Certain drugs, notably turpentine, ether, camphor, aloes, and mag. sulph., affect the secretion and quality. In conclusion Mr. Widden gave the appearance of the milk of tuberculosis, foot and mouth disease, and pleuro-pneumonia.

A discussion ensued, in which Messrs. Wilson, Stapley, Farrant, Gilruth, and Reynolds joined; after which a vote of thanks was passed to Mr. Widden for his valuable essay.—Mr. W. Wright, M.R.C.V.S., then exhibited a black and tan terrier suffering from "follicular mange," taking a great deal of pains to give the members present a detailed account of the case, and exhibiting specimens of the "dermodex folliculorum" under the microscope. This case created a large amount of interest, and a hearty vote of thanks was awarded Mr. Wright on the proposition of Mr. Wild, seconded by Mr. Clode.

A vote of thanks to the Chairman brought the meeting to a close.

F. HOBDAY, *Assist. Secy.*

THE CENTRAL VETERINARY MEDICAL SOCIETY.

THE usual monthly meeting was held at the Royal College of Veterinary Surgeons, 10, Red Lion Square, W.C., on March 10. Mr. W. ROOTS, the President of the Society, occupied the chair, and the other members present were :—Messrs. J. A. W. Dollar, Veterinary-Lieut.-Colonel Duck, Veterinary-Captain Evans, Veterinary-Captain B. Glover, Mr. J. S. Hurndall, Veterinary-Major Kettle, Veterinary-Captain Matthews, Professor Macqueen, Messrs. P. McOnie, T. Moore, W. Roots, A. Rogerson, H. G. Rogers, J. Rowe, Veterinary-Captain F. Raymond, Professor Shave, Veterinary-Captain F. Smith, Messrs. W. N. Wright, W. Willis, and Veterinary-Lieutenant E. R. C. Butler, was present as a visitor.

Communications were read from Mr. Slocock and Professor Walley, expressing their regret at not being able to attend the meeting. Professor Walley wished success to Captain Raymond's endeavours to secure an extension of the curriculum.

General and Veterinary Education.

The discussion on this question (introduced by the paper of Veterinary-Captain Raymond, F.R.C.V.S.,) was resumed.

Mr. J. SUTCLIFFE HURNDALL began by saying that he had been more than ordinarily impressed with the extra amount of interest which had been taken in this subject which, on the face of it, had an appearance somewhat of dryness. He congratulated Captain Raymond upon the courage he had evinced in introducing a subject which, from an individual point of view, might not in the first instance have seemed likely to excite any considerable interest, but it must be gratifying to him, as it was to all who took a special interest in this question, to find that his paper had occupied already the attention of the Society at two of its meetings, and was about to engage its attention at a third. The subject was one, he thought, that commended itself to all who were concerned in the welfare of their profession. He could only generally express approval of Captain Raymond's proposition—that the course of education should extend to a period of four years. He did not propose that evening to attempt to criticise the plan which had been laid down, because it seemed to him it was so well arranged that only matters of detail need affect it as it stood. He had no doubt that they would all agree with him that there was a general concensus of public opinion in favour of a higher education, not only in their own profession but generally, as the matter affected the public at large. It was, however, worthy of some special notice on their part that the sister profession was now directing its attention to a subject similar to that with which they were then dealing. As they were all aware, it was under consideration whether the course of education in the hospitals should not extend to five years instead of four years—at least, he believed he was right in saying that. If, then, that were deemed necessary for the medical profession, he thought they had very little argument to support a proposition in opposition to Captain Raymond's paper. Was it not a fact that a good deal of soreness and dissatisfaction had existed in the minds of a very large number of veterinary surgeons because they were not more cordially received by members of the medical profession. Last year, when the International Hygiene Congress was held, the medical profession and veterinarians were brought into closer intimacy, he thought, than they were ever before. That was, no doubt, extremely gratifying to them, but who represented them? Were they not gentlemen of infinitely higher attainments, educationally and professionally, than the great bulk of their members? If that were so, did it not point the moral which Captain Raymond had suggested, namely, the necessity of at once seriously considering and adopting a higher standard of education in their profession. They must boldly consider their position: that was to say, they who had been through their education and were supposed to have finished it,

so far as teachers were concerned, although no one would deny that they were daily adding to their knowledge, yet they knew by their own experience that it would have been greatly to their advantage—personally, he thought it would have been much to his advantage—if the education which they enjoyed had been of a higher and superior character, and enabled them to grasp more thoroughly the difficulties they encountered when they were preparing themselves for their professional examination. It was an old saying that if they had to erect a substantial building they must first lay a good sound foundation upon which to rear their superstructure. Hence he maintained that a condition precedent to a higher educational preparation for their profession—a higher professional education—was a good and a liberal general education, to which they first seriously needed to turn their attention. Reverting to his smile of the erection of a foundation, he asked how could men possibly undertake the study of physiology, anatomy, pathology, and materia medica, if they had only a very indifferent education such as he had seen in many instances. How, in the name of fate, could they possibly understand and study the subjects he had named? Mr. Hunting (he was sorry he was not present to hear and have an opportunity of answering these remarks) objected to what he called the "dead languages." Mr. Hunting was decidedly opposed to Latin, also to botany, but the latter did not come within the scope of the suggestion which he (Mr. Hurndall) was about to make. He held that, instead of Latin being an optional subject, both Latin and Greek should be compulsory subjects. In pursuit of the study of anatomy, physiology, materia medica and pathology, one constantly came across words of Greek and Latin derivation the meaning of which, if he had no knowledge of those languages, he could not possibly understand. Arduous study would be necessary in that case in order to ascertain the meaning of words, the full significance of which would at once be apparent to those who, in their early studies, had acquired a knowledge of Latin and Greek. Speaking from his own experience, he could say that his knowledge materially assisted him in understanding innumerable terms which he came across in the course of his professional studies which, without that knowledge, would have presented considerable difficulty and necessitated frequent recourse to dictionaries. Therefore, he maintained that Latin should be a compulsory subject. Perhaps it was asking a great deal to ask that Greek also should be made a compulsory subject in the preliminary examination, but he would certainly make it so, and he was quite certain that, in the long run, students would not only appreciate this subject, but be thankful that it had been rendered obligatory, presuming they were really earnest in their desire to qualify themselves for their professional duties and work. The advantage will be clear to all who have a knowledge of those languages. Why, too, Mr. Hunting should object to botany he (Mr. Hurndall) could not understand. He might just as well object to chemistry. A knowledge of botany was useful, very useful, under certain circumstances; and his (Mr. Hurndall's) contention was that any study which tended to broaden the mind would make a man a better veterinarian or medical man. In considering how they were to arrange the course of subjects which were to be rendered compulsory in the preliminary examination, they must think of what would enable a man to grasp the various branches of study he must pursue in order to qualify himself properly for his profession. Reverting to their relations with the sister profession, he saw it indicated in *The Veterinary Record*, just after the Hygienic Congress, that they were to take a position side by side with the medical profession and to co-operate with them. If they were to do this they must be equal to the members of the medical profession in their ordinary general knowledge, and they must also be professionally equal to them in a knowledge of their own profession. Until this was brought about, and nothing short of this, they could not hope to take their stand side by side with the medical profession with honour and credit to themselves; nor were they likely

to find medical men coming cordially forward to recognise them as a sister profession. He referred with regret to a remark made by Mr. Sheather when he opened the discussion at the preceding meeting. In effect, he said that he wanted to have two or three classes of veterinary surgeons to suit the different styles of client with whom they had to deal. That was a very unfortunate remark, and he hoped it did not go forth to the world, because his experience had been that, so long as they conducted themselves to the best of their abilities as gentlemen and professional men, there was no difficulty in their getting work from those who were not their equals in social standing or educational advantages; and he saw no necessity for supplying a class of imperfectly educated veterinary surgeons to meet the wants of such clients. He was exceedingly sorry to hear Mr. Sheather, a gentleman whom they all respected, give expression to such an opinion as that. Professor Macqueen, who was present and could correct him if he were wrong, left the impression upon his mind that he practically brought a charge against Captain Raymond of having made a partial statement as to the character of the examinations on the Continent. He seemed to the speaker to infer that Captain Raymond had only put the rosy side before the meeting, and had kept back something which it was not well for those unacquainted with Continental modes of procedure to know. Professor Macqueen seemed to him (Mr. Hurndall) to be hypercritical but he might be wrong in this impression. And Professor Macqueen concluded his remarks with a sort of threat that, if they did not improve themselves, things would soon be brought to this pass: it would be compulsory for all examinations to take place at the schools. If he understood him rightly, Professor Macqueen hoped that such would be the case. He (Mr. Hurndall) could not share that hope. He thought such a state of things would be lamentable. Of course, he had no doubt that professors and teachers of schools were quite as capable of sitting on an Examining Board as anybody else; but as long as human nature was human nature, he hardly thought they could exercise an unbiassed judgment. Concerning the remarks of Professor Macqueen which had conveyed the impression to his mind of which he had spoken, Mr. Hurndall said he was quite certain that, whatever might be the faults found with the suggestions offered by Captain Raymond for their consideration, that gentleman never had the slightest intention of misleading anyone, or left anything unsaid which he thought it his duty to say for their instruction and consideration. Generally, Captain Raymond's suggestions had his entire approval. Certainly he approved of the four years' course, and he could only hope that, as the outcome of the discussions which had been held upon the paper, some practical steps would be taken tending in that direction.

Major GLOVER said that unless their students were educated technically, they would not, of course, prove equal to the professional demands made upon them when they began practice. The present standard was absurdly low as regarded general education. The clause in their standard which required a student to know rudimentary history or geography, but not botany, was, in his opinion, ridiculous and almost farcical. As to the standard of general education, he thought the first essential for a candidate was that he should have a general, sound English education. That he regarded as a *sine qua non*. Having acquired a general, sound English education, the candidate should be required to learn Latin, and next a modern language—German or French. He (Major Glover) would, in fact, bring the educational examination as near the present examination for the medical profession as possible. He did not see why their candidates should be a bit less educated than those intended for the medical profession; indeed, he thought it quite as necessary that they should know just as much, and prove themselves as well educated. An increased curriculum he considered to be very desirable and necessary. Giving the schools all the credit fairly due to them, the fact of the matter was that their

students had not been properly educated technically. He was, however, against any new arrangement being suddenly sprung upon the schools, and would afford them ample time and consideration for adapting their teaching to the requirements of the proposed new standard for examination. The instances of which he had heard, showing the gross ignorance of candidates for the diploma, were simply lamentable. It could not be imagined that these students had received a proper course of instruction at school. Such exhibitions of ignorance were not isolated cases—they were too frequent to be pleasant. Then, as regarded the education of the schools, he thought the college could suggest to the schools the kind of curriculum that should be adopted, but, of course, the former could not command that the teaching should be up to their standard. The college could, however, institute an examination, and all students that failed to come up to the standard they fixed could be plucked. And very properly so. Allusion was made at the last Council meeting to the "fads" of examiners. He did not believe for a moment that students were plucked because of examiners' fads. It would be a serious thing for a student to prove unsuccessful, simply through the whims and fancies of theory or practice that an examiner might entertain, and if there were such examiners, which he (Major Glover) very much doubted, it would be well to know who they were. The sooner such examiners resigned, or were called called upon to resign, the better. But he did not, as he had said, believe in students being plucked for fads of examiners. Something had been said about pupilage. Now he did not think pupilage was at all necessary. He thought the college should institute examinations sufficiently testing to prove whether a student was qualified to hold the diploma of the college or not. He suggested that the extra year it was proposed to add to the duration of training—the fourth year—should be wholly applied to training, if possible; but that a student should not be asked where he learnt his practice so long as he knew it. If they adopted pupilage, they opened a back door to many things cropping up in the way of practitioners taking pupils but taking no trouble with them. He was himself one of three pupils, and without going into particulars, he might say that while a pupil he practically learnt nothing, as the practitioner with whom he was placed had too much business to be able to teach and train his pupils. He did not think it reasonable to suppose that because a candidate happened to be a pupil he was a bit better qualified in practical knowledge than a student who kept his eyes open and was anxious to learn, and picked up practice in that way. As to examiners and practical examinations, he desired to know whether the examiners submitted a report to the Council after their examination. He had asked the question of several individuals whom he thought might know, but they were unable to tell him. In any case, he thought it was most important that examiners should submit reports to the Council of the College on the examinations they had just held, showing the kind and quality of candidates who had presented themselves, whether the candidates had improved or not in their attainments, or whether they were generally better taught than before. With respect to the examinations, he would have them more certain—particularly the practical examination, the most rigid and testing, he thought, of the series. He would have the practical examination last a whole day, because it was a criterion that the student not only knew his practice but his theory as well, and could apply his theory to his practice. In the proposed A examination, Captain Raymond put anatomy, chemistry, and botany. Well he (Major Glover) would like to see physiology in the "A" course. He suggested for this course, anatomy, chemistry, and physiology. He thought the sooner students knew something about physiology the better. They certainly should know, as soon as possible, something about the natural processes of the body; and physiology, he thought, went hand and glove with anatomy in a certain way. It was assuredly a most important subject. Touching botany, he thought that should be associated with hygiene.

He considered it needless to have an examiner on the Board solely for botany, but would like to see an examiner appointed to examine in hygiene and botany combined. Most of their practical botany could be placed under the head of hygiene, and that, he thought, was all that they really required to know. In reading Prof. Macqueen's remarks at the previous meeting of the Society, he (Major Glover) could scarcely think he was serious in suggesting and insisting that the teachers of the schools should also be examiners. The circumstances connected with the schools in this country and the Continent were not at all parallel; and he did not see how on earth the teachers could also be examiners. If they had Prof. Axe examining in London, Prof. Williams in Edinburgh, and Prof. McCall in Glasgow, all he could say was that there would be a certain race for supremacy; and, in that way, they would know what would take place. Human nature was human nature, as the previous speaker said, and they could not be surprised at the result which would inevitably follow if school teachers became also examiners. If teachers were anxious to become examiners, he should like to hear that they had re-instituted the preliminary examination which used to take place before students presented themselves for examination before the examiners. That preliminary examination, he was led to believe, had been abolised, and he thought it was a great pity if such were the fact. That preliminary examination in the school, if a student failed to pass it, had the effect of saving him going before examiners to be plucked. It saved his money and it saved him from being disheartened. A student would much prefer to fail at a preliminary examination in his school than go before a Board of Examiners and fail there. It was found that those who passed the preliminary examination fairly well were pretty sure to pass the subsequent examination by a Board of Examiners. In relation to the whole question, he believed that opinion in the profession was divided. Still, he thought there was a large majority in favour of progress, both as regarded the general and technical examination; and he thought if the Council of the College did its duty they would be backed up in every way by the profession. Their whole status had improved and was improving: and in proportion as they proved to the public that they were equal to the demands made upon them in public life as well as in their private professional life, so would the public appreciate them. He looked upon the public as really their judges, and if they could show that they were equal to the occasion, he felt sure they would be duly appreciated by the public.

Mr. J. A. W. DOLLAR, remarked that so much had been said and well said on that occasion, that very little remained to be said from his point of view, so far as extrinsic causes were concerned. By "extrinsic causes" he meant causes which did not really, in the first instance affect them; but he thought there was at least one intrinsic cause which might be said to be operating in the agitation which had been initiated, and rightly initiated, for raising their educational standard. He referred to what nearly everyone complained of nowadays, and referred to with great bitterness, namely, the overcrowding of their profession. Captain Raymond had shown by the table he introduced into his paper that, during the last ten years the profession had increased in number at least one-third; and he (Mr. Dollar) thought that that in so young a profession as theirs, was a very serious matter indeed. Perhaps he could make his meaning clear by an illustration. If one sowed an organism in a suitable soil, growth ensued until the entire area was occupied. Then came a critical period; if no fresh spot could be obtained, and if transplanting were not resorted to, the organism perished. And they, he thought, were at a critical point in their existence, or very near it, because from every side he heard the cry of greater crushing into the profession, greater overcrowding and more opposition in every way. Hence he thought it was absolutely necessary to take some measures for relieving that state of congestion; and the only right and proper measure which he could foresee was to qualify

themselves, either by improved education or by such means as were deemed suitable, to enlarge their sphere of action. Those who read their professional journals, probably noticed that two or three months ago reference was made to a scheme which had several times been mooted but which had really never come to anything, namely, breeding to type; attempting to gain back from foreign countries that which they seemed at the present time to possess over us—the ability to breed horses and other animals of a particular type, instead of breeding them in that hap-hazard style which we appeared to have recourse to in this country almost universally. As the funds required for this purpose would be enormous, it was almost impossible to imagine any private individual undertaking this work, which must become a government matter. And, in the near future they hoped, at any rate, that the government would take this matter in hand and set about fixing certain breeds—those which were more urgently required for the country. In those circles the services of qualified veterinary surgeons would be in great request. That, of course, was only one of the directions in which they should qualify themselves. He believed that they little thought there were many other outlets for their energies. For instance, the meat inspection, which at present was largely done by unqualified persons, might, he thought, fairly be claimed as one of their special spheres of action. Then there was the breeding and crossing of cattle and determination of the values of fodder. Their advice should be sought in the erection of stables, in sanitary work generally, and in questions involving those diseases which were communicable from animals to men; and he thought they ought at least to occupy an equal position with the medical profession. Then there were such questions of animal diseases as, for instance, now ravaged various portions of the southern hemisphere, Australia and New Zealand. There he considered they ought to give valuable advice, and possibly in the future they might become preparers of vaccines against various contagious diseases; and last, not least, there seemed to him to be a larger field opened, or one that would be opened for persons to act as teachers and examiners. That, he thought, was a sphere of action which they should most seriously consider, and although at the present time it appeared almost (perhaps not so much as it had been) as though the offices of examiner and of teacher were life appointments, still it might not always prove so, and he thought they should have a kind of reserve in case of the accidental removal by death or otherwise of any of those persons. With respect to Captain Raymond's suggested four years' scheme, two objections had been offered to which alone he attached any importance. One objection was that the incomes derivable from the practice of veterinary surgeons were not sufficient to warrant any lavish expenditure in education; and the second objection was that in the proposed new arrangement the Royal College of Veterinary Surgeons would be at a loss in conducting three and four years' examinations. As to the incomes not being sufficient to warrant any large initial expenditure, he thought that that was to a large extent a sort of bogey held up to deter them from further progress. He drew their attention to the state of affairs when Coleman founded his College in London, and Mr. Dick founded his College in Edinburgh. A much less favourable state of affairs existed then than now. At that time the profession of veterinary—if it could be called a profession at all—was handed over to quacks, cow-doctors, and wise women. The fees in money or kind were exceedingly small at that time, and had persons been deterred by that argument from entering on a course of education destined to improve the profession—in fact to form a profession—they would not have been there that day. When, therefore, they contrasted their present position with the position of veterinarians at the time to which he alluded, he thought they might be emboldened to go further with perfect confidence. As to the second objection, that the Royal College would be at a loss in conducting these examinations, he would refer them to the fact that in the three years' examination, at each table there were two examiners.

That had not always been so; until the period of the Edinburgh disturbances he thought the fact was that only one examiner was placed at each table; and two examiners seemed to have been placed at each table, in order to avoid the peculiarities or the pranks of any one particular examiner. In the proposed scheme for a four years' course it had been provided that a written examination be added to the *vivâ voce* examination. He submitted that in that written examination, they would have a sufficient guarantee against any unfairness against the student; and, therefore, with a written examination, the withdrawal of one of the two examiners would be perfectly justifiable, and this would reduce the expense. In these circumstances he believed that the Royal College would be able to conduct the examination, not only at no loss but with a positive gain.

Capt. SMITH said that as long as he could remember, this question of an increased educational test and an enlarged college curriculum had cropped up, either on the occasion of the introductory addresses of the various societies, or at the ordinary meetings of those societies, but he was afraid little had been actually done in that respect. He thought they should be very thankful to Capt. Raymond for having focussed their attention on this specially important subject, and focussed it, too, in such an exceedingly able manner. He thought they must look to those who, at the early part of this century, held positions of trust and responsibility, for many of their present difficulties. Mr. Coleman and his colleagues then had it entirely within their power to raise the status of veterinary surgeons in this country. He failed to do so, and those who followed had also failed to raise the educational standard for pupils and increase the college test. The result was what? Why, that in the estimation of the public a veterinary surgeon and an ignorant man were almost synonymous terms. A short time ago a certain general officer said to him, "thirty-five years ago, when I entered the service, a veterinary surgeon was a man who was to be shunned; now, however, I find that he is an individual of education and culture, and a man whose acquaintance is to be cultivated." That, he thought, showed that there had been a certain amount of advancement, but he was convinced that there was still ample room for improvement. In the last number of *The Veterinary Record* he read the remarks of a speaker at Manchester, a gentleman who was, he believed, a student at the same time as himself, and to whom he was considerably indebted for having taught him the first piece of anatomy he ever learned. That gentleman stated that he considered the best class of practitioner was drawn from the sons of blacksmiths, but he also included the sons of farmers, and in this he (Capt. Smith) entirely agreed. With some people it seemed to be thought that veterinary surgeons in the practice of their profession must meet with a certain amount of roughness; and that, therefore, it was necessary, or that it followed that veterinary surgeons should be drawn from a rough class. That he wholly denied. He thoroughly agreed with Mr. Hurndall when that gentleman said that a man's position was entirely in his own hands, and that the measure of the respect accorded him was the measure of his own self-respect. The work of veterinary surgeons was rough no doubt, and some of their clients were rough. A man said to him that "contact with horses seemed to be brutalising in its effects upon men." It was not contact with horses that had this effect, but contact with persons connected with horses. Outsiders were apt to imagine that a veterinarian could not be a gentleman. That was a fallacy. The profession of a veterinary surgeon was an honourable calling; and it was very largely what they made it themselves. Naturally, the first requirement of a man who had to gain his living by his intelligence, was a good sound education. He (Capt. Smith) was not sure that he entirely agreed that it was absolutely necessary that their students should acquire all the Latin and Greek upon which some speakers had insisted. No doubt, as a form of mental training, it was very necessary that a man should have some acquaintance with the dead languages, and also

the living languages; but he thought the first requisite was a sound English education, with some knowledge of foreign languages; and he believed that the dead languages would follow as a necessity of that sound English education, that the student would himself take to those languages, and that they would prove of great use to him in his subsequent professional career. No mention had been made of the value of the study of logic as a means of mental training, but logic was included in continental curricula. To him it appeared that logic was of the greatest necessity to a veterinary surgeon. A veterinary surgeon was a man who had to observe keenly, and to argue upon what he saw, and not what he heard. Logic imparted a certain amount of cautious balance and stability to a man's mind, it also increased his reasoning powers, and gave to the individual and his judgment a soundness which he did not think he could get in any other way. He should be very glad to see included in their proposed new curriculum a certain amount of logic, which any man of ordinary intelligence could acquire from an ordinary science primer of thirty-five pages, which it was a pleasure and a delight to read. Logic was the science of sciences, and many statements which one heard at meetings would never be made if the speakers had had that training, that reasoning power, which logic alone could give. They might never live to see the changes which would occur in the profession if the scheme which had been so ably brought before them became law, but none the less it was their duty to do all they could in their time to improve the status of their calling. The influence and effect upon the public mind, of the changes proposed to be made, might not be obvious for many years to come; but he felt sure that an increased educational test, a more prolonged college course, and more searching examinations, would enhance the esteem in which they would be held by the public. The result would be to turn out better men, more scientific men, more practical men; men who would be capable of taking their proper social position—a social position which, he thought, they could not at present take, simply because instead of being looked up to they were rather looked down upon. Capt. Smith went on to deny that examiners had fads, or, rather that they allowed their fads to affect in any way a candidate's chances of success. No student, he felt certain, was objected to because of any fad an examiner might entertain. What examiners tried to do was, he believed, to ascertain whether a student had a good all round practical knowledge of the profession he sought to practice, so that when he went out to the world to do practical work he might not make a fool of himself. They could not expect much more of a student than this. He was sure that examiners made due allowance for the difficulties of students. When candidates failed because of their lack of the most elementary information, they turned round and said their failure was all owing to an examiner's fad. Their failure in point of fact was due, not to an examiner's fad, but to their own incompetence. Major Glover spoke of his having had the advantage—or disadvantage—of pupilage. Well, he (Capt. Smith) had had no such advantage. His experience was gained after he had obtained his diploma. He gained it all at the expense, perhaps, of his master's clients. After he got his diploma, he became an assistant, and endeavoured to make as little of a fool of himself as possible. He thought the difficult thing to determine was whether a man should have a diploma or not; and that, before beginning practice, he should have more practical acquaintance with the work of a veterinary surgeon than a college could afford. As to whether a practical examination should last a whole day, he hardly knew. He believed that one could find out in an hour whether a man was sufficiently well informed to enable him to start upon his professional career without making a fool of himself, or as little of a fool of himself as possible. Mr. Dollar had mentioned the possible fresh openings for veterinary surgeons in the future. He (Capt. Smith) was sorry to say that in the past they had not availed themselves of many opportunites of extending the field of labour in their profession. There

was, for instance, the matter of meat inspection. This work had been done by untrained individuals, very largely by doctors, who knew as much about it as the ink bottle before him. They had a certain knowledge of anatomy, as much perhaps as an ordinary butcher, and also some knowledge of healthy tissues and the healthy appearance of tissues. The work of meat inspection was, however, peculiarly the province of veterinary surgeons; and there alone in this country was a considerable field for their special capacity. There were other fields which should be open to them, as mentioned by Mr. Dollar. But it was absurd to say that their profession was overcrowded, and that they were getting indifferent fees. He took it that their fees were what they made them, and were dependent entirely upon the amount of useful information they could give their clients. An incompetent man got an indifferent fee, a competent man got a higher fee. It rested with them as a body to raise their scale of fees if they considered them too small. During the last fourteen or fifteen years he had seen papers issued by the various societies, urging the necessity of increasing the scale of fees; but this required the hearty co-operation of the whole of the profession, and it was no use one man raising his fees if another practitioner dropped his. Finally, Capt. Smith expressed his belief that a great future was in store for their profession if some change, some improvement, based upon the paper brought before them, was introduced without further delay.

Professor C. S. SHAVE said that Mr. Hurndall seemed to be under the impression that Latin was not already an obligatory subject, which was not the fact. He (Professor Shave) objected entirely to the introduction of Greek into the scholastic course. Botany should, he thought, be taught in their schools, particularly because it engendered the power of observation. If a man wanted to be a botanist, he must be a very close observer, and if he lost all his knowledge of botany even before he left college, his power of observation—strengthened and improved by his pursuit of this study—would remain. He quite agreed with one of the speakers that botany should be associated with hygiene, and he thought that the examiner on hygiene could sufficiently test a student's botanical knowledge. As to different styles of veterinary surgeons, that was, men of different styles, they had had, and always would have, such differences in all professions, and it was useless for them to say that they would have only one type of veterinary surgeon. Although an increased educational test might be necessary and advisable, still, with or without that test, he believed the character of individuals would continue to be largely formed and affected by the nature of their associations and surroundings. If a veterinary surgeon was in what they called a "low" London practice, he was pretty sure to become a practitioner more or less of that particular type. They did become so at any rate. The veterinary surgeon whose practice lay, for instance, amongst farmers and pig dealers seemed gradually to acquire the instincts, he might say, of those particular individuals. He did not think anything they could do would remove this tendency. He believed that some veterinary surgeons would rise above, and others would fall below the standard they attained after, or at the time of their leaving college. With regard to teachers becoming examiners, he could not see how, under the present system, this would be possible, in consequence, as had been pointed out, of the rivalry of the different schools. Major Glover had dwelt upon the inefficiency of students. He (Professor Shave) thought that if this inefficiency existed, it was entirely to be laid at the doors of the examiners of the Council. He disclaimed responsibility on the part of the teachers for the inefficiency of the men who entered the profession, and could not understand how the teachers could be held responsible for this when at the gate of entry of the profession there was placed a body of men who were supposed to guard it. If those men were inefficient, then he supposed the Council were able to turn them away and get fresh men. Some of the blame which seemed to be

wholly cast upon the teachers might at any rate be thrown upon the examiners, and so on to the Council, and so on to the general profession. As to fads, he was not one of those who believed in any examiner rejecting a student because he (the examiner) had a particular fad. He believed examiners had fads, he had experience of their having fads, but he did not believe that they aired their fads to the detriment of students. He was strongly of opinion that a written examination should be adopted as soon as possible. At all the proposed examinations, A, B and C, he should like to see a written examination as well as, of course, a short oral examination. A quarter of an hour for the *viva voce* examination would, he considered, be quite sufficient. Under the present system he did not think it was possible for a student to be in a satisfactory position so far as practice was concerned, simply by attending college. He might, of course, learn a good deal there in a practical way; but as had been pointed out, he did not believe a man could obtain that practical tact necessary for a veterinary surgeon in business, unless he was either articled to a veterinary surgeon before he entered college or, perhaps better still, acted as a veterinary assistant immediately afterwards. While he was not prepared to advocate compulsory pupilage, he held that the necessary practice could not be obtained in school. He did not think it was possible for a body of teachers who had a few other things to do, to afford that practical instruction which he deemed necessary to equip a veterinary surgeon to face the public. So far as the preliminary education of a veterinary surgeon was concerned, he thought their standard should be just the same as the medical or dental, which he considered quite low enough. Indeed, a very little alteration of their existing standard would bring it up to that of the medical and dental professions. Concerning the proposed alteration of the curriculum of the college, or rather the opportunity of extending college study from three to four years, he dared say there would be some opposition offered to this, and perhaps with some reason. There was, for instance, the question of extra expense. From a public, and perhaps from other points of view, it might be desirable that a veterinary surgeon should have a four, five, or even six years' course to equip him for the exercise of his profession; but, considering the remuneration a veterinary surgeon was likely to get—and he did not think the average veterinary surgeon (unless he happened to be born with a good practice or some other advantages) was likely to obtain more than £300, £400, or £500 a year, it was probable that the extra initial expense which the suggested change would involve would deter men from seeking to enter the profession. The £400 or £500 which, on the average, it now cost a student to get the necessary education preparatory to becoming a veterinary surgeon, was, he thought, sufficient. The extension of the course to four years would not, he thought, serve to diminish the number of students, and so reduce the members of a profession already said to be overcrowded. They would alter the class of candidates, getting what some people would consider a better, and others a worse class of men. Instead of farmers' sons and the sons of veterinary surgeons (farmers would hardly, he thought, be able to send their sons to the veterinary college if the cost of their education exceeded £400 or £500), they would get their students from the moneyed class of society, and these students would bring with them into the profession certain social advantages. This might be regarded by some as beneficial to the profession. Upon that point he offered no opinion. Certainly, he should not at present recommend the adoption of a four years' course, and that mainly on the ground of expense. Things were, on the Continent, altogether different. There a student could have his four years' course at an expense of £150 which would cover everything; and if he happened to have a scholarship, it would cost him less. No parallel could therefore be drawn between the education of the Continental Veterinary and the English. The English student had to pay more dearly for everything he got. He had to pay the fees of the colleges, which were very

much larger than the fees exacted on the Continent. His personal expenses were greater, and he had no opportunity of obtaining a considerable amount of money as a scholarship.

Professor MACQUEEN at the outset of his remarks disclaimed any intention of having previously (as Mr. Hurndall inferred) implied that Captain Raymond had presented them with a one-sided paper. He had before stated that he did not think the time had arrived when professors could be examiners, but he looked forward to the time when they might become examiners. If professors on the Continent succeeded in being examiners, and the graduates of Continental schools gave satisfaction, then he failed to see why professors could not perform the same funcion in this country. He was aware of all the remarks which had been made with regard to rivalry, but he did not admit that that would have any effect upon the functions performed by professors when examining students. Human nature was human nature. Granted. At the same time he resented any insinuation that a professor was any worse than an examiner, because he happened to be a professor as well as an examiner. He maintained that professors were just as likely to be virtuous in their actions as any other class of men in the profession. Major Glover said that teachers should not examine because of the rivalry of the different schools, and then he went on to admit that, while the schools were competitive, they did not give a satisfactory technical education. Here they had the best of all technical education, so far as practice was concerned; the schools were competitive, were rivals, and yet they did not give satisfaction to the Major and his friends. Because of the rivalry which existed the education given in the British schools, taken all round, would compare favourably with that of any Continental school they might like to name. Continental veterinarians were not, as a body, superior to their English brethren. Major Glover stated that test examination was abolished in the schools. In some schools it was abolished, and rightly. He (Prof. Macqueen) maintained that when a student entered school he made a contract for a certain programme of education, which might be small or great, good or bad. He entered school upon a special agreement, and having complied fully with the conditions of the school, no teacher had a right to interpose between him and his examiners, and say "You are not fit to present yourself before a disinterested body." No oral examination, Prof. Macqueen contended, would ever properly gauge the capacity of a student; and hence he advocated written examinations as being more effective and satisfactory. He was in perfect accord with the useful remarks of Mr. Dollar as to the need for extending their sphere of active practice. It was said that veterinary surgeons should not lecture about their craft in connection with the technical lectures that were being given in the country under the auspices of County Councils. And Mr. Rogers, their Secretary, said veterinary surgeons should not lecture, should not go down to the country to lecture.

Mr. ROGERS: No, on the contrary, I mentioned the advantages that farriers derived from lectures.

Professor MACQUEEN (continuing) regarded lectures by veterinary surgeons on technical subjects connected with their profession as the best advertisment the profession could get, and he knew that amateur students were the best clients veterinary surgeons could obtain. Instead of those students trying to cure cases themselves, they were generally the first to call in the aid of an experienced professional man. Mr. Dollar had suggested that there should be some limit to the time in which a man was allowed to teach; and speaking personally he (Prof. Macqueen) held that no teacher was fit to teach for more than ten years. The enthusiasm for teaching was apt to die out within that time. Captain Smith said that a veterinary surgeon and an ignorant man were synonymous terms. Well, that was a very hard statement.

Captain SMITH: No, I said he was considered so by the outside public. That is an important difference.

Prof. MACQUEEN: The outside public is an entity you cannot analyse, and therefore that statement is merely an observation. He proceeded to defend the teachers from aspersions which had been cast upon them by several of the speakers; and pointed out that there was not now as there used to be, some one recognised authority on points of difference of opinion and of method which arose. There was now no central authority, no man in the profession more than another, who was voted the individual who could give advice or direct the profession. In the remarks which he (Prof. Macqueen) previously made, he maintained that they should have a more advanced preliminary educational test. There seemed to be no dispute about that. He thought that was where they might improve the profession vastly. That preliminary examination which was now optional should be made compulsory. Then, he thought, the profession would be benefitted by an extended curriculum, but he still maintained that teachers should be examiners. If they would not have that, then he asked them to allow teachers to sit at the table with the examiners as co-examiners with those appointed by the Royal College. Owing to the want of any authority, it was necessary that the teaching at individual schools should be recognised at the time of examination. They might think only of the profession and the question of overcrowding, but they had to think of the student as well. They had to do justice to the student and to the school who, together, had done as much to make the profession as the Royal College of Red Lion Square; indeed the schools existed before the licentiate body. Who were occupying foremost positions in the profession? Men of high scientific attainments, men who could stand the present three preliminary examinations? He said they were not. But those were the men who were looked up to by the public, and were entrusted by the public with important work. It was not a question of education not long ago—why now? Simply because education had become more general, and they expected their students to be a much more educated class. With the improved and extended elementary education that was now given by the State, the students that came to their technical schools would come better educated and so, he thought, they would find that the educational problem would right itself. At the same time he considered that they should exact a higher preliminary examination. He asked them to remember, however, that the majority of the men occupying the best positions in the profession already were not men distinguished for their educational attainments.

On the motion of Mr. ROWE, seconded by Mr. DOLLAR, the discussion was further adjourned, and the meeting then ended.

Mr. John Taylor and Veterinary-Lieut. E. R. C. Butler, A.V.D., were nominated for Fellowship of the Society.

H. G. ROGERS, *Hon. Sec.*

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

THE annual meeting and dinner of the Scottish Veterinary Medical Society was held on 17th February 1892, in the London Hotel, Edinburgh, Mr. Jas. Clark, V.S., Coupar-Angus, the President of the Society, presiding. There was a large attendance, the announcement that Principal Williams was to give an important deliverance on the much-debated question of American Lung Disease *versus* Pleuro-Pneumonia, being sufficient to ensure a large gathering of members.

After some preliminary business, the SECRETARY brought forward a motion to the effect that honorory members should be allowed to become life members by the payment of a fixed sum.

Principal WILLIAMS said he thought the Society, which had now a large and and ever-increasing membership, should be confined to members of the profession, and that the prominent agriculturists and others, elected as

honorary members, should not be called upon to pay either a composition as life members or an annual subscription; though it should be open to them to give a donation to the funds of the Society if they saw fit. The Principal moved accordingly, and his motion was unanimously carried. It was unanimously agreed that the next quarterly meeting of the Society should be held at Aberdeen.

Mr. James Thomson, Aberdeen, was elected a member of the Society, and Messrs Bell, of Forfar; Bisset, Brechin, and Connachie, Junr., Ayton, were nominated for membership.

Principal W. WILLIAMS, New Veterinary College, Edinburgh, then proceeded to give a demonstration by means of the Limelight, of the differences between Pleuro-Pneumonia existing in this Country, and Lung Disease found in imported American Cattle. Copies of MS. had been given previously to the members present.*

Professor BOWHILL, the late Professor of Bacteriology and Anatomy at the New Veterinary College, who left immediately after the meeting for Vienna, to complete his studies in bacteriology, then referred to the part he had taken in investigating this subject, and his discovery of the bacterium found in the American lung disease. He also read a letter he had received from Mr. Billings, the State Veterinarian of Nebraska, who testified that he had examined the sections of the Deptford lung, and also the photo-micrographs of the same prepared by Professor Bowhill, and cordially agreed in holding that the distinctive differences between this American lung disease and true contagious pleuro-pneumonia were patent to any microscopic observer.

Mr. R. RUTHERFORD, Edinburgh, said Mr. Finlay Dun had suggested, as an explanation of the difference of opinion which existed upon that subject among so many high veterinary authorities, that one party had received a section of the lung affected with pleuro-pneumonia, while the other had received a different section; but Principal WILLIAMS refused to accept the suggestion. He admitted that it was quite possible to have a combination of broncho and pleuro-pneumonia in one animal, but it was a very rare complication. The great fact remained, however, that in every American lung which he had examined he had found broncho-pneumonia, and not pleuro-pneumonia. He had sent M. Nocard a portion of the Deptford lung of 1891 and a photo-micrograph of the bacteria, and he read a letter from M. Nocard, stating as the result of his examination of the sections of the lesion sent him by Principal Williams, and of those that had come under his own observation, that the lesion of the Deptford lung was certainly not of a pleuro-pneumonic nature. It was a bacterian broncho-pneumonia which, in all probability, was of the same nature as that which he (M. Nocard) had previously described. A mummified specimen of a lung, which was afterwards declared to have belonged to the Deptford animal of 1891, was handed round by Mr. Rutherford, and the disease was at once declared by Principal Williams and Mr. Bowhill, one of his assistants, to be broncho-pneumonia; while Mr. CAMPBELL, Kirkcudbright, to whom the portion of the lung originally belonged, maintained that the disease was pleuro-pneumonia. The views thrown on the screen were described by Principal Williams, Dr. Hunter, and Mr. Bowhill, and they showed in what respects the two diseases differed.

The members of the Society and their friends dined together. Mr. Clark, Coupar-Angus, presided, and he was supported by Dr. Webb, Aspatria Agricultural College; Principal Williams, New Veterinary College, Edinburgh; and Mr. Campbell, Kirkcudbright. The croupier was Mr. Peter Moir, hon. secretary to the Society, who was supported by Mr. Richard Rutherford, Edinburgh, and Mr. Hutton, Kelso.

The loyal and patriotic toasts were given from the chair, Major CAMPBELL, of the Kirkcudbright Artillery Volunteers, responding for the reserve forces.

*This address appeared in the VETERINARY JOURNAL, for March.

Mr. RUTHERFORD, in proposing "The Royal College of Veterinary Surgeons," said he had seen with surprise that it was expected their new charter would soon receive the sanction of the Privy Council and become law. His distinct understanding was that before the charter was to be sent to the Privy Council it was to be submitted to a representative meeting of the whole profession, and no such meeting had been held. He hoped this was not an attempt to carry the charter by a side wind. He approved of the proposal to restore to members the right of being on the Council; but he thought the policy of limiting the examinerships to fellows was narrow-minded and short-sighted, and if carried out it would lead to a great deal of justifiable grumbling. He thought the profession at large would not be satisfied if they were excluded from the position of examiners. He also objected to the provision which would prevent members of Council from being examiners, and would exclude examiners from the Council. With regard to the general educational question, he said he had no objection to their students learning Latin or French, but it was of far more importance that they should be good English scholars. Principal WILLIAMS, in acknowledging the toast, said he did not belong to the rapidly progressive or revolutionary party in the Council, and as that party was now in power, it was probably the last occasion on which he would address them as a member of Council, on which he had served for over twenty-three years. Referring to the educational question, he agreed with Mr. Rutherford that a good English education was sufficient for any veterinary surgeon. Mr. D. YOUNG, *North British Agriculturist*, proposed "The Scottish Metropolitan Veterinary Medical Society," which was acknowledged by the CHAIRMAN. The other toasts were "The Teaching Schools," by Mr. THOMSON, Aberdeen, and replied to by Principal WILLIAMS; "The Agricultural Interests," by Dr. WEBB, and acknowledged by Mr. YOUNG; "The Visitors," by Mr. CUNNINGHAM, Slateford; "The Chairman," &c.

P. MOIR, *Secretary.*

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

(Continued from page 228.)

One very important point I wanted to ask Mr. Smith before proceeding with my remarks is, what percentage of recoveries he has after the very extensive process he adopts. We do not seem to be perfectly clear about our definition of the disease. Nasal gleet may be a disease accompanied by the discharge from the Schniderian membrane without any pus whatever in the sinuses. I should be perfectly justified in describing such a case as Mr. Raymond has mentioned, without having any pus in the cavities at all, as nasal gleet and those cases can be cured by nasal insufflation, by vapourisation of the nostrils with antiseptics, and also by the injection of fluids into the nostrils. I certainly met with a good deal of failure in my surgical treatment of these cases, and I believe now that it was probably through want of attention to matters of detail in the method of operation and the successive treatment, although I have pursued the irrigative treatment without much success. There is one remedy brought to my notice by a well-known Homœopath in our profession. I tried iodoform pretty extensively without meeting with success, but not so with the remedy which the homœopaths pin their faith to, and very often a case may be overcome by means which we may say are utterly impossible. They have a remedy in *hydrasetis canadensis*. I believe, with Mr. Raymond, that it is quite possible for fluids and gases to permeate the frontal and the other sinuses of the head, and if you submit a horse to the vapour of creosote. I believe it permeates

the whole of the cavities. I like to get at these cases, if possible, at a stage preceding the gimlet stage. I believe that prevention is better than cure, and when you have a case under your notice, if it is thoroughly injected with a solution of hydrasetis canadensis? and the sinuses are at the same time stimulated by counter-irritation, many cases recover without surgical interference at all. This I am positive of because I have had many cases of the kind, and my previous failures rather deterred me from taking operative measures. If Mr. Smith has been successful in a sufficiently large number of cases where he has operated to justify us generally, he has certainly done us an excellent turn professionally by bringing this under our notice, and I thank him personally very heartily.

Mr. ADAMS: I have very little to say on this subject. My practice of late years has been almost entirely among young horses, and I have seen very little of this disease. It cannot be said that the horses are not liable to catarrh, because I have had a large number of severe cases, but I have had but few cases of nasal gleet; and these from injury. I should like to ask Mr. Smith if it is in his experience that young horses are less liable to it than aged horses, because it is a curious thing that in the many thousands of horses that have passed through my hands I should not have had a single case of nasal gleet from disease. I have had several from injury, one from a kick causing a fracture. I elevated the bones and treated it in the usual way and it did uncommonly well, and other cases have recovered equally well.

Mr. WRAGG: I should like, sir, to add my thanks to Professor Smith for the very able manner in which he had introduced this subject here to-day. I have been trying to charge my memory as to when I had the last case of trephining, and as it is now some few years ago, it seems to me that I can confirm what has been said, that we have less cases of nasal gleet now than we had formerly. As regards the position of the operation, I have been in the habit of trephining the frontal sinus as low down as I possibly could, and that was suggested to me by Mr. Roalfe Cox, who told me he always trephined in that position, because then the pus did not accumulate down at the bottom of that sinus. Professor Smith remarked that he had a case where there was great hæmorrhage and that reminds me, although it has nothing to do with this subject of a case I once had. The horse bolted round and injured his head. He was brought to me with the blood pouring down the nostril. There was no wound that I could detect. The blood poured down in a stream. I concluded that it had injured the turbinated bones or ethmoid cells, and the blood vessels covering them, and that was the cause of bleeding. After a great deal of difficulty I managed to stop it.

The CHAIRMAN: Professor Smith, I should be sorry for this discussion to close without my having an opportunity of offering you my personal thanks for coming here and giving us such a very interesting lecture. You began (and I venture to think the first part of your remarks were not the least acceptable) with the reminder, to the older practitioners, of a part of the anatomy of the head, which doubtless some of us at any rate had got rusty upon. Now with regard to the cases that have been stated by you as being in the first place inflammation of the membrane. I think if we start with that as the cause we shall be inclined to follow it up and so abandon the idea, that in these cases we have a pus producing membrane. It has been said that with the enormous number of cases of catarrh which come under notice of those more particularly who have to deal with young horses, the percentage of cases of nasal gleet are comparatively small. The question is then asked, but how do you account for the constant accumulation of this pus? I think it was Mr. Hunting who stated his view of it, and I am bound to say I agree with him. Now, as to the treatment. I agree with many of those who have spoken before me; I thought in all probability I should be singular. In fact the very certain manner in which our essayist spoke, and spoke so extremely lightly of and ridiculed the

idea of anything like treatment other than surgical being a benefit, led me to believe that I might be singular, but I agree with many of those who spoke before me in believing that these cases can be in their early stage relieved by such treatment as has been suggested by various speakers, viz., the inhalation of certain agents, such as iodoform and the application of blisters to the face, but I think it is very likely that some of us may be hardly fair to our essayist in arguing as we do. He may say "I say nothing about the early stages, I only recognise it as nasal gleet when we have pus within the cavities." It can be hardly fair to him to bring an array of evidence against his argument that agents such as I have spoken of and counter-irritation is of no use in such cases. Still I don't know that we can altogether cease from blaming our essayist in arguing that nothing can come in contact with this membrane in consequence of the small opening which he very properly says exists between the nasal cavity and the sinuses. I am bound to say that I do not agree with that, and the evidence that has been brought before us to-day by Mr. Goodall and that has been, to some extent, confirmed by Mr. Raymond where even such comparatively large particles as sand can find their way into the Eustachean tubes. I think that rather contradicts the theory that such a fine powder as that of iodoform cannot find its way, and readily finds its way, and come in contact with the membranes lining the sinuses. Now, again, the Professor has said that these cases are always to be attacked surgically. Well, now I have asked myself this question, how many cases of nasal gleet are operated upon by the ordinary country practitioner? That he has cases of nasal gleet we cannot deny. I ask myself the question how many of these cases recover without surgical operations? That they do recover is unquestioned. I think it is a fair argument, that we do have recoveries from other treatment besides ieat of surgery. Speaking again as to the application of iodoform, I think it would be only in those very early stages that such an application would be of any service. and I suggest the sprinkling of iodoform on some hay, and allowing the horse to inhale it in that way. I have recovered a bad case of nasal gleet by such treatment, and in cases where there is an offensive smell and troublesome discharge for a considerable time I have got decided benefit. Unquestionably the drainage tube suggested by Mr. Goodall must have a decided advantage over the stiff glass tube as suggested by our essayist. Probably he may have used both but I am bound to say although I have not had a very large experience in the use of the drainage tube I, for one, should certainly prefer the more flexible one suggested by Mr. Goodall. I will now ask Professor Smith to reply to the remarks that have been made.

Prof. SMITH: Gentlemen, my first duty is to apologise for the very light manner indeed in which I have spoken of the medical treatment of nasal gleet. I mean by nasal gleet, pus or the collection of some material in the facial sinuses, and, I believe really, that there lies the difference between us. The cases I have had to deal with are beyond all shadow of doubt disease of the facial sinuses. I say that because we have opened them and looked inside. The cases you have had to deal with are not beyond all shadow of doubt, because the sinuses have never been opened, and I can conceive, considering the large number of cases of catarrh we have, that there are cases where nasal injections and insufflations may be ot the greatest value. Such cases are those which Mr. Raymond, Mr. Edgar, and others have mentioned. I should say, although it is very impossible for a person who has never seen the cases, that you probably had 'some disease of the posterior nares rather than pus in the sinuses; if, on the other hand, either or all of these gentlemen could assure me that they are satisfied pus was in the sinuses, and that they satisfied themselves by putting in the little gimlet we have been speaking of, then I distinctly withdraw the very sweeping statement I made, but under any circumstances I feel that it is my duty to apologise if I have wounded any susceptibilities, by making such sweeping statements as "tinkering," etc. I

have got, however, rather muddled about this pus secreting membrane, and it is very amusing to me to hear Mr. Hunting on bacteriology. He ridicules it; he tells us we cannot have pus without an organism, but I can conceive there is ample opportunity for hundreds of thousands of organisms to find their way in. But a very great difference of opinion which is of a practical nature is as to whether we shall use caustic applications or not, and I most certainly, entirely on Mr. Hunting's recommendation, shall try non-caustic applications, and I shall see whether I have such good results. I did not, however, use the electric light, although if I could have had it I should have done. Mr. Goodall spoke about not extracting the 5th molar. In the case of a molar tooth which is fractured, such as the one exhibited, I am satisfied that had I extracted it, certainly I should have done good. I might have cured what I think must have been reflex paralysis. I cannot conceive I did right by leaving it in, although I quite sympathise with those who, the same as myself, have experienced very great trouble indeed in extracting the molar tooth, that tooth, however, might have been a little looser than some, inasmuch as it had considerable inflammation around it, and consequently must have been a little loosened in its alveolus. Mr. Edgar asked me for the percentage of recoveries. I wish I had thought of that before, but the percentage is really very high. I think going back through one's recollection without actually looking at the Case Book, I do not think out of a very large number of horses that I have had more than 4 or 5 that have had to be destroyed. As to the total number operated upon I could not say without reference. If I were to make an off-hand statement I should say 75 per cent. had at least recovered. Mr. Adams asked whether young horses were less liable than old. I do not see many young horses, but I should say they are, from the fact that he does not see much diseasc. Then our President dwells on the point as to whether it is a pus forming membrane. I have got somewhat muddled, I think there must be a pus-forming membrane. It is not like ordinary pus which comes from the disease, although some of it is. I cannot help thinking it must be a pus-forming membrane or at any rate something closely allied to it. Let us assume that those cases of Mr. Edgar and Mr. Raymond actually had pus in their sinuses, and the excellent results which our President has told us of by nasal injection do also occur. It strikes me if a few grains of iodoform or any other medicament conduces to such a lot of good, how much more could be done by a hole in the front of the face. I think really if this material which is shot up the nostril gets into the sinus, we ought to do more good in shorter time by putting it in through the front of the face. I do not think any of those gentlemen would treat a deep seated abscess by shooting a little iodoform into it. In the same way I feel convinced that if we have got pus in these cavities, the sooner we let it out the better.

Mr. RAYMOND: I have very much pleasure in moving a vote of thanks to Mr. Smith for the very interesting paper which he has presented to us. There are one or two subjects which we might discuss at greater length, but I am afraid our dinner time is approaching.

Mr. WRAGG seconded.

(The vote was unanimously passed).

Professor SMITH: Mr. President and gentlemen, I have to thank you indeed for the very cordial manner in which you have received my very poor attempts to bring the disease to your notice. I think, perhaps, the greatest subject for congratulation is the very admirable discussion which has followed my few remarks, and I feel sure that if they can be of any value to the profession or the public I will not have wasted my afternoon.

The meeting of the Society on the last Thursday in March, 1892, was fixed to be held at Guildford.

C. PACK, *Hon. Sec.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

AT the Monthly Council, held on March 2nd,

Sir JOHN THOROLD reported that a discussion had taken place in Committee upon the recent outbreak of foot-and-mouth disease, and the various Orders issued by the Board of Agriculture since the occurrence of the disease were laid upon the table. A letter had been received from Mr. J. H. Carter, F.R.C.V.S., accepting the terms of his appointment as Provincial Veterinary Surgeon for Lancashire. A revised edition had just been issued of Professor Brown's pamphlet on "Animals of the Farm in Health and Disease." A report had been received from Mr. Roberts, Provincial Veterinary Surgeon for the County of Flint, as to the absence of swine fever, and the prevalence of Influenza amongst horses. The Committee had considered the results of the experiments carried on at the Royal Veterinary College as to foot-rot in sheep, which were given in the annual report of the College, to appear in the forthcoming number of the Journal. The experiments tended to show that foot-rot was communicable from diseased to healthy animals after longer or shorter intervals, dependent upon the conditions of exposure to infection.

Mr. COPE (for Professor BROWN) had presented the following report:—

FOOT-AND-MOUTH DISEASE.—Since the last meeting of the Committee, foot-and-mouth disease, which has been absent from this country for about six years, has suddenly made its re-appearance within the Metropolitan district. The first animals found to be affected with the disease were some Danish cattle, which were in the lairs in the Metropolitan Cattle Market on February 4th, affected in a comparatively early stage. Immediately precautions were taken by closing the market gates and slaughtering all the animals which were then within the lairs and market. It subsequently transpired that the Danish cattle, referred to, were landed in this country on Saturday, January 30th, and brought up to the market lairs on the following day (Sunday), and were exposed for sale in the market on Monday, February 1st, but it was not until Thursday, February 5th, that the disease became apparent in them. Since February 4th, eight outbreaks have been detected in the cowsheds of London, the last outbreak being on February 20th, and although the cowsheds in London are being visited almost daily by a large staff of Veterinary Surgeons, up to February 29th, no further cases have been detected in them. It has now been ascertained that the disease must have existed in the Metropolitan Cattle Market on February 1st, because not only have several of the outbreaks in London cowsheds been traced to certain animals which were bought on that day in the Metropolitan Market, but other outbreaks have occurred in the counties of Kent, Sussex, and Surrey, which are traceable directly or indirectly to the movement of cattle out of that market on the same day. The outbreaks in Kent have occurred at Chatham, Rochester, Welling, Minster (in the Isle of Sheppey), Blane (near Canterbury), Folkestone, and Cheriton (near Folkestone), at which latter place it has extended to adjoining farms. In Sussex the disease first appeared at Cuckfield, near Hayward's Heath, and was traced to certain sheep brought from the Metropolitan Market to Hayward's Heath sale yard, and subsequently removed to Cuckfield, and an outbreak has occnrred at Partridge Green, which is in the neighbourhood of Cuckfield, In Surrey the disease first appeared in the neighbourhood of Croydon, where it has extended to other premises, and an outbreak has occurred at Ash, which is on the borders of Surrey and Hants. One outbreak has occurred at Edgeware, in the county of Middlesex. On Saturday a telegram was received from Edinburgh, stating that the disease had appeared in a cowshed in that city, but no satisfactory explanation has been as yet obtained as to how the infection was introduced to these premises. Every possible means have been taken by the Board to arrest the extension of the disease; in some instances the Board, aud in other instances the Local Authorities

have slaughtered the animals on the premises with a view of stamping it out; in every other case strict isolation, combined with disinfection of persons and all things which had been in contact with diseased animals, has been rigidly enforced. Up to the time of writing (notwithstanding the fact that the disease must have existed in this country since the 1st of February) the measures taken by the Board appear to have had the effect of confining it to the district of London and the counties of Kent, Sussex and Surrey, and, with the exception of the outbreak reported in Edinburgh, nothing has been reported North of the Metropolitan district. Including the cattle which were found affected with the disease in the Metropolitan Market twenty-seven outbreaks have been reported. Many of them, as has been previously stated, have been stamped out, and the following are the only centres in which it is known to exist at the present time, viz., at Minster (Isle of Sheppey), Folkestone, Cheriton and Newington, which are near to Folkestone, and Blane, near to Canterbury, all these places are in the county of Kent; at Partridge Green, in the county of Sussex; on premises in the neighbourhood of Croydon; and at Ash, in the county of Surrey; in one cowshed in London; and in another in the city of Edinburgh. The Board has issued orders prohibiting the movement of animals out of all these counties, and the holding of all public and private sales in the whole of these districts (except for immediate slaughter) has been stopped.

PLEURO-PNEUMONIA.—During the four weeks ended February 20th, 1892, three fresh outbreaks of this disease occurred in Great Britain. One of these was in London, one in York (West Riding), and one in Leith. The number of cattle affected with the disease slaughtered during the month was ten, while 150 healthy cattle exposed to the risk of infection were slaughtered, and also twenty-one cattle suspected of being affected, but which on post-mortem examination were found to be free from it.

ANTHRAX.—There have been twenty fresh outbreaks of anthrax reported in Great Britain in the past four weeks. Forty-two animals were attacked, two diseased animals were killed, twenty-four died, and five recovered. These outbreaks of anthrax occurred in the counties of Devon, Essex, Huntingdon, London, Norfolk, Northampton, Notts, Somerset, Surrey, Sussex East, and York W. R, in England, and in Fife, Midlothian, Roxburgh, and Wigtown in Scotland.

SWINE FEVER.—This disease is less prevalent than it was a year ago. In the four weeks ended February 20th, there were only 129 fresh outbreaks reported as compared with 212 in the corresponding period of 1891. There were 731 pigs attacked in the four weeks, 401 diseased pigs were killed, 269 died, 96 recovered, and 130 remained alive at the time the last published return was made up.

Mr. DENT desired to call attention to one matter in connection with the outbreak of foot-and-mouth disease. In the new Order from the Board of Agriculture, it was stated that "A local authority *may*, and when required by the Board of Agriculture *shall*, cause to be slaughtered" animals affected with foot-and-mouth disease, and also that "the local authority *shall* out of the local rate pay compensation" for animals so slaughtered. This was recurring to what had caused a great deal of dissatisfaction before in the case of pleuro-pneumonia, and the Council would remember that this question was discussed by them, especially in connection with Cumberland. Afterwards it was enacted that a sum of money voted by Parliament out of the general taxation of the country should be placed at the disposal of the Board of Agriculture in order to provide payment of compensation for compulsory slaughter. The present Order as to foot-and-mouth disease was a return to what he could not but call a vicious practice, viz., compelling a local authority to slaughter, but making it pay compensation out of the local rates.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner of this Association was held at the Grand Hotel, Manchester, on February 26th, 1892.

The President, Mr. Wm. Woods, occupied the chair, and amongst the members and friends present were the following gentleman:—Professors Williams and Walley, Drs. Railton and Fairclough, F. E. Bradley, Esq., B.A., LL.B., Veterinary-Lieut.-Colonel Duck, A. Smith, Esq., Messrs. P. Taylor, T. Greaves, J. and A. Lawson, S. Locke, W. A. Taylor, E. Faulkner, I. Hopkin, A. Munro, W. Whittle, T. Briggs, A. M. Michaelis, H. D. Chorlton, J. L. C. Jones, Hy. Hall, A. W. Mason, E. J. Lawson, A.V.D., E. S. Gubbin, W. F. Shore, A. H. Darwell, and Jno. B. Wolstenholme.

The PRESIDENT proposed "that a vote of condolence with the Royal Family in their late bereavement be passed and entered on the minutes." This was seconded by Mr. Peter Taylor and carried unanimously.

Mr. James Laithwood, F.R.C.V.S., of Congleton, was proposed for membership by Mr. P. Taylor, seconded by Mr. E. Faulkner, and carried unanimously.

Mr. T. G. Duggle, M.R.C.V.S., of Bunbury, near Tarporley, was nominated by Mr. Edwards, of Chester, per letter.

Resolved that the next ordinary meeting be postponed until the second Wednesday in April.

Mr. P. TAYLOR proposed, and Mr. WHITTLE seconded, that Mr. Thomas Greaves be again the nominee of this Society as a candidate for a seat in Council.

Mr. A. Lawson thought that before the motion was put to the meeting, it would be well if Mr. Greaves would kindly state what were his views, and the policy he would advocate in the future for the profession.

Mr. T. GREAVES said that as the profession had plainly expressed its desire on the following points, viz., "Abolition of the Ninth Clause, Abolition of Dual Appointments, Election by the Profession of the whole Council," he had ceased all opposition, and would loyally advocate and support the new charter, and if "asked to join any party to oppose it, I will not do so."

The motion was then put to the meeting and carried unanimously.

The PRESIDENT then read his inaugural address.

Gentlemen,—Permit me in the first place to express my recognition of the great honour you have conferred upon me by electing me your president for the coming year. I have always expressed the opinion that it was contrary to the interests of an association such as this to confer upon the young men the positions of honour, because I have thought that necessarily they could not command that respectful confidence and support which would naturally attach to an older man, and because they could not have the experience which time alone can give.

I now gladly acknowledge that in the person of our late president my previously-formed opinions have proved themselves at fault, and I congratulate him on the success which attended his year of office, as well as upon his management of the business, which left nothing to be desired. It will be my endeavour, with the assistance I know you will give me, to follow in his footsteps; and I earnestly hope that at the end of my term of office, I may leave the presidential chair with the feeling that it has not suffered while in my keeping.

Since the last address many things have happened of interest to the profession. In the department of the Contagious Diseases (Animals) Act, the new regulations relating to contagious pleuro-pneumonia have had a fair trial. My opinion of these regulations is entirely favourable; I believe they will, within reasonable time, stamp pleuro-pneumonia out of this country, and though at first they aroused considerable opposition amongst many members of the profession, I hold, after a rather extensive acquaintance with the way they are carried out, that there is nothing a veterinary surgeon need hesitate

at doing; and considering the law requires all contact animals to be slaughtered, the cost involved is so large that it is not wonderful that those who are responsible for the payment of these enormous amounts of compensation should want to be satisfied that they are really dealing with contagious pleuro, by having the lungs forwarded to them. Certainly it may not be exactly flattering to us as a profession, but personally I have never felt that I was degrading myself in the least by carrying out this portion of the order; and I can find no fault with the appointment of gentlemen who are not veterinary surgeons as travelling inspectors. They do not, so far as my experience goes, supersede the local veterinary surgeon, but the superintendent of the police, and their work is police and not professional work.

I should be glad if the Government could see their way to attacking glanders in horses in a somewhat similar manner, perhaps not going so far as to kill all contact animals, though I think they should have the power to kill any they deem necessary; paying, of course, compensation for those actually diseased, as well as for any others they may slaughter. I have heard an objection to this—that a class of persons would arise to buy glandered horses for next to nothing, for the purpose of obtaining compensation. This I should look upon as favourable to the operation of the Act and the speedy extirpation of the disease.

I am strongly of opinion too that tuberculosis should be included in the Contagious Diseases (Animals) Act, especially as regards milking stock, and that compulsory slaughter, and some amount of compensation should be undertaken by the Government, extending at least to those cattle commonly known as "Piners" or "Wasters"—in which the disease is affecting the whole system, and also to those in which there is undoubted tubercular affection of the udder.

A more difficult disease to deal with is rabies, because it is one on which the general public feel themselves quite competent to argue with specialists, but the present order is framed, it seems, not with the view of attacking the disease definitely, but of tinkering with it, so as not to offend susceptibilities, particularly annoying to anyone living on the verge of a patch of country over which the Local Muzzling Order is in force. Where I live, for example, on one side of the town all dogs are to be muzzled, while on the other side they may go free. This style of legislation aims, and no doubt succeeds to some extent, in the suppression of rabies, but we ought to aim, not only at its suppression, but at its total extinction. I am firmly convinced, and I believe in this opinion I am with the majority, that a general muzzling order throughout the country—not fitfully exercised, and extending over several years—combined with a six months' quarantine on important dogs, would be sufficient to stamp it out, and afterwards quarantine alone would keep it out. There is no necessity for the importation of dogs into this country, and considering the horrible nature of the disease in human beings it seems to be little short of a disgrace to allow it to work its ravages year by year amongst the population. And what are the objections of the sentimental opponents to such an order? Mainly two. The first—that muzzling so excites some dogs that it may in time produce rabies; and the second—that some dogs will not be muzzled; and be-that they fight with their muzzle till their head is raw, and so the muzzle comes an instrument of cruelty. The remedy is very simple—any dog in which the muzzle will produce rabies had better be destroyed at once, and the same remedy applies to a dog that will not be muzzled at any price. All the dogs in the Kingdom are not worth one human life, and the country at any rate would not be the loser in sparing those few examples that will not submit to the muzzling operation. If it would strengthen the hands of those in authority, I should be in favour of endeavouring to get a resolution passed at one of our National Congress meetings, embodying some such views as I have stated, and I feel sure it would be passed by a large majority.

From this subject I come now to two events of considerable interest to the veterinary profession which deserves a few words. The first I refer to is the Centenary of the College at Camden Town. My reference to this is necessarily short, because, beyond the event having happened, we, as private practitioners, know very little about it. I feel bound to say I do not think the Governors recognised how thoroughly veterinary graduates from every college look upon the London School as part and parcel of the veterinary profession, and not merely as a teaching school leading to it; how they look upon its history as their history; and how they would have rejoiced to make its Centenary worthy, not only of the school, but of the whole profession had the invitation been extended to them. I think the way they were slighted is one of the saddest professional events I have to chronicle during the past year. The profession is advancing fast, and it is, to my mind, a great cause for regret that this opportunity of furthering its advance was not taken full advantage of. That the public regard it as of considerable importance was shown by the leading articles in the leading papers and the prints in the pictorials, amongst which I was particularly edified with a picture of a horse with laminitis in slings.

But if I speak regretfully of this event, of another I can speak in terms of the highest gratification: I refer to the joint Congress on Hygiene and Demography. To that Congress veterinary surgeons were invited as scientific men on terms of equality with the highest *savants* of the day, and they proved themselves well worthy to be reckoned amongst scientific men, both in the high merit of the papers they presented to the Congress, and in the part they took in the deliberations. This event marks an epoch in the progress of our profession, and has done us more real lasting benefit than perhaps any other event of the year.

I have still two or three subjects to touch upon, I hope, without wearying you too much. There is the New Charter, which I trust will be discussed calmly, impartially, and fully. Personally, I regard the outcry about the injustice of the Ninth Clause as a storm in a teacup—a sentimental grievance of so little importance that I care not whether it is abolished or maintained; though it seems somewhat paradoxical that those very fees paid by the Fellows on the understanding that they were to receive certain privileges, should be used in order to deprive them of the same. But after all, perhaps, the Clause will be better abolished, as it deprives the members of the right to sit on a Council where business capacity and common-sense are of more importance than deep scientific learning; but I certainly think that Fellows only should act as examiners, for the reason that any person unable to obtain the fellowship degree by examination is unfit to act as an examiner; indeed, I think the higher scientific degree may reasonably claim the right to be the more fitted of the two, and if a Member, able by his scientific knowledge to obtain that degree, is too obstinate in his views, I should doubt the capacity of such an one to act as an efficient and fair examiner. Upon that point I should be very firm, for I feel strongly that you not only require your examiner to be master of his subject, but he should, in addition, be a sympathetic, broad-minded man, which an obstinate man rarely is.

This brings me to the subject of the examinations and the College curriculum—rather a thorny one, as there are so many conflicting interests. You are all, I have no doubt, aware that there is at present going on a movement to extend the collegiate course by another year, a movement it seems to me resting upon three bases.

1. That the allied professions of medicine and dentistry have recently, or are about to extend their courses or periods of study.
2. That on the continent a four years' course is general.
3. That we are becoming so overcrowded, that we must do something to restrict the supply.

One cannot, perhaps, deny any of these propositions, though with reference to the last it should be remembered that most other professions are in the same position, and that in comparing the numbers admitted with the deaths occurring the fact should not be forgotten that qualified veterinarians will be required to fill the places of the registered practitioners as they gradually disappear.

In considering the extension of the period of study, I can add nothing to what has been said by Capt. Raymond. I think he has proved his case, but I should like to hear it discussed as to whether it would not be advantageous to allow a two years' apprenticeship to count for one year at College. I am certainly coming back to the opinion that pupilage is necessary, but at the same time I recognize the futility of endeavouring to make it compulsory in face of the very natural opposition of the schools. It would undoubtedly injure them by diminishing the number of students for a few years, and I should be very sorry to feel that any one section of the profession was acting in any way in opposition to the interests of another. To the schools we owe much, both as individuals and as a profession; but I think if it could be arranged in the manner indicated, it would make it far easier to obtain pupils without injuring the schools, and with decided benefit to the profession. It would encourage pupilage without making it compulsory; for I admit the force of the very strong objection, that we have no right to say where a man should learn his practice, but should aim to make our examination such that before obtaining his diploma he must have learnt it somewhere. The Board of Examiners for the C practical, as it is called, have worked on these lines, and have endeavoured to make their examination a little more perfect than it was. The result of their endeavours has been the somewhat limited satisfaction of bringing about their heads quite a storm of hostile criticism and opposition, although I defy anyone to prove that our examination is not an improvement on the old one, and I request evidence of any knowledge being required of a student, that he might not be required to possess as a veterinary surgeon the first week he was in practice.

Amongst other things, we are criticised that we trespass on examinations already passed by the student, and ask questions which really belong to another table. Well, when any two subjects overlap, it is difficult to keep entirely clear, and the C practical really overlaps every one of the others. Am I, for example, to be debarred from asking the action of bi-carbonate of soda, or the appearance of poisonous plants in the stomach, because the one may be partly a chemical, and the other a botanical question? Of any peculiarity of action of a horse lame in the flexor brachii, or the muscles affected in shoulder slip, because it touches anatomy? Am I not to ask why constipation is a frequent concomitant of a sluggish liver, because the physiological action of bile on the intestines may be involved in the reply? or must I ask none of these questions because any of them, when considered by themselves, may more properly belong to the first portion of the final examination? I cannot deny that I have asked questions more properly belonging to another table, indeed, I will give you an example or two, of difficult anatomical questions, which have completely puzzled several of the gentlemen who have passed their anatomy examination. "Put your hand on the hip joint." "Trace out the lateral cartilage on that horse's foot." I have had the hip joint fixed into the ischial tuberosity, and I have had it not once, but many times, at the anterior spine of the ileum; so I think you will agree with me that, in asking about lameness, it is as well in the interest of the student to commence with a thorough understanding that both of you mean the same region. If a student in his first, or A examination, were asked a question on morbid anatomy, I could well understand that he would have a grievance; but I cannot for one moment admit that we are to be debarred from asking questions on a subject he is supposed to know, and which touch upon some practical question in the examination he is undergoing.

Before closing the subject of the examinations, I wish to refer to a complaint recently made that at the last Practical Examination held in Edinboro' one student was actually under examination for seven hours. I do not know whether this was so, but even allowing for some exaggeration, it seems at first sight a very long period; but just allow me for one moment to analyse the statement, and see what it comes to. There is no need for supposition as to the quality of the student; he must have been a very slow one. Now the rule has been for each student to be examined orally by each Examiner separately for at least half an hour, but perhaps you will understand it better if I give you my method and the time which may be occupied, and then you multiply this by four, because there are four Examiners and each one examines the same student separately. I commence by an oral examination lasting at least half an hour, and if the student is very slow this time is easily extended to 45 minutes. This portion includes the diagnosis of lameness in several horses. After this I usually require the student to take a horse which I select for him, and examine him thoroughly as to soundness, and write me a certificate on him; after which, in case of any unsoundnesses I ask him to write me a report advising me as to the treatment to be adopted for those unsoundnesses. Now the student takes as long as he likes to do this, and beyond being in sight of the Examiner, so as to prevent any outside assistance being given him, there is no interference with him. I don't think it is extravagant to suppose that a slow, nervous, student, anxious to miss nothing in his examination and report, may, for this portion of his examination, take one hour; and having finished this, I still require him to perform some operation on the dead subject for which again he is allowed his own time; the Examiner of course being meanwhile engaged in orally examining another student.

You will see that under these conditions, one student might be under examination by one examiner for the best part of two hours, and if each of the other three examiners happened to keep him a similar length the time occupied might reach seven hours, and still the student might not have had a longer examination than was required. I think this explanation will show that what at first sight might seem excessive, is not really so, when you consider the length of time allowed for a student to do what an ordinary practitioner would not take long about. It was my privilege to be a student at Alfort during the time of the examinations for the French diploma, and I can assure you that even now our examination would not be accepted as completely satisfactory there. I believe that any change in the direction of shortening the time occupied will not be an improvement, and I would earnestly beg of the Council not to allow the most important examination a student has to undergo to be made one tittle less searching than at present, but to devote their attention to the educational or preliminary examination prior to entering college. This wants strengthening very much, and in considering which languages should be made compulsory, English should not be forgotten—the additional ones, in my opinion, should be Latin and Greek. Most of our scientific terms are derived from one or other of these languages, and there is nothing sounds worse than for a scientific man to mis-pronounce a scientific term. These few remarks on the preliminary examination are, however, by the way, and I conclude the whole subject by the general statement that whenever an effort is made to render any examination more searching opposition must be expected; but so far as we can ascertain by direct evidence, our method has weeded out the weak ones and passed the strong ones; and it certainly discovered and placed in position the winners of the last FitzWygram prize.

The last subject that I shall bring before your notice in this address is that of the Royal Society for the Prevention of Cruelty to Animals, upon which several papers have been read during the last year or so; and it is astonishing

to find with what unanimity the feeling exists that the Society is exerting itself in the direction of persecution as well as prosecution. It went wrong in the first instance on the question of docking, and a malignant fate seems to have dogged its footsteps ever since. In its infancy its staunchest friends outside London were the veterinary surgeons. They helped it at a time when it was most unpopular, and assisted, often against their own interests, in educating the public mind to abhor cruelty to animals in whatsoever shape. How have they been treated since? Until the Society gained sufficient foothold to stand alone they were treated with flattery and fawning, and informed that their opinions were received as paramount; but immediately it felt itself strong enough, their opinions were thrown to the winds, and with a want of gratitude which is bound to be remembered, it turned its power against the profession which had stood by it in its weakness, and has for some time fatuously attempted a policy of coercion as to what a qualified member of the profession should be allowed to do, and how he should do it. Now we have arrived at a stage in which a Society's officer—perhaps an ex-policeman—assisted in his opinions by a barrister in London, will readily undertake the prosecution of a veterinary surgeon, and dictate to him his duty. Perhaps you will reply that these important prosecutions are only undertaken on the advice of a veterinary expert. Aye, but what veterinary expert? Is it not the case that the opinion of those veterinary surgeons only is taken whose views are in accordance with the opinions of Mr. Colam? This I say is not taking the opinion of a veterinary expert, but seeking a veterinary expert with certain opinions. It is easy in this way to find veterinary support for a prosecution, and to find a professional man from the heart of a town practice voyaging any distance to teach a country practitioner how he should foal a mare, or whether there is any necessity to dishorn a bullock. It is quite true that these prosecutions often fail, but what is the cost to the practitioner assailed, who is compelled to go to great expense and leave no stone unturned to vindicate his character, and whose worried state of mind may well be imagined, knowing as he does that the loss of his case not only brands him with the stigma of cruelty, but goes a long way to ruin him in his business.

Surely a Society anxious to do right would seek advice from amongst those practitioners best acquainted with the subject on which a prosecution may be pending, and not from persons whose knowledge is necessarily limited. The status of the Society in the eyes of the general public is, I think, sufficiently indicated by the contemptuous term, "humanity mongers" by which their Officers are generally described. It is time the Society paused, and allowed better councils to prevail. It is a good Society, and generally speaking its operations are necessary, but not until the whole system of working it is reorganised can it be considered a Philanthropic success. I don't think the remedy is far to seek or difficult to apply. At present the only method it has of estimating its own success is in the number of convictions it obtains, and these are placarded over the towns and paraded in the Annual Report for the benefit and sustenance of the subscribers, and practically, the only method of estimating the work done by an individual Officer is to compare his number of cases with those of his predecessor. This very naturally excites in any Officer a desire to outnumber the convictions of his predecessor, and in order to do this he will naturally employ that Veterinary Surgeon whose views as to cruelty will assist him in his object—and a Veterinary Surgeon, remember, gets paid by the Society for those cases he appears against. It may be said, and very plausibly, that the accused can bring evidence to defend his case; doubtless that is so, but as costs are rarely given against the Society the fact remains that even if the case be dismissed it will, in the majority of instances, actually cost more money to prove innocence than to plead guilty and let the case take its chance. And the class of persons usually summoned considers only the cheapest way to get out of the difficulty. I pointed out years ago

in a letter to Mr. Colam, this fault in the working of the Society, and suggested that instead of the number of convictions being considered evidence of the Society's good work and their Officers' assiduity, a small Committee chosen from the gentlemen of the district should be asked to report periodically as to whether the district was fairly free from cruelty, and their Officers' efficiency should be judged from that report. This would abolish any excess of zeal on the part of an Officer, by doing away with the necessity of his obtaining a certain number of convictions, and I believe would very sensibly diminish the number of cases brought before the Courts. Perhaps the number of cautions would correspondingly increase, but with more substantial justice and humanity to many plodding, poverty stricken horse owners.

Gentlemen, it only remains for me now to thank you for listening to a rather tedious paper, and to ask you to jot down from time to time, any interesting or instructive cases you may come across, for discussion at our quarterly Meetings.

On the motion of Mr. THOS. BRIGGS, seconded by Professor WILLIAMS, a hearty vote of thanks was accorded the President for his address.

The members and friends then partook of dinner, at which the usual loyal, patriotic and professional toasts were duly honoured.

JNO. B. WOLSTENHOLME,
Hon. Sec.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner of the North of England Veterinary Medical Association were held on February 19th, at the County Hotel, Newcastle-on-Tyne, the President, G. R. Dudgeon, Esq., in the chair. There were also present: Messrs. A. Hunter, D. Dudgeon, T. Greaves (Manchester), David Macgregor, G. M. Mitchell, J. Gofton, J. G. Deans, J. B. Nisbet, W. F. Mulvey, D. Macgregor, W. Awde, F. T. Finney, and J. W. T. Moore, acting Secretary. Visitors:—Messrs. W. Hunting, London; E. E. Bennett, A.V.D.; Dr. H. E. Armstrong, Medical Officer of Health; Dr. F. J. Waldo, J. Arup, Denmark; F. R. Stevens, J. Nettleton and — Jarvie.

Mr. GOFTON said at their last meeting they had a most interesting discussion brought before them by Professor McFadyean. There was a report of that meeting supplied to the *North British Agriculturist*, which was so wide of the mark that he thought they should not pass it over without some comment. He thought they ought to pass a resolution endorsing the action taken by the late President and Secretary in flatly contradicting the report supplied. He could only believe the report was supplied by some one who had allowed the thing to prey so much upon his mind that he actually believed the thing was as he reported it.

Mr. D. DUDGEON: I suppose you mean to say the report was not in accordance with the facts.

Mr. GOFTON: It was the very opposite.

Mr. MOORE (acting Secretary), seconded Mr. Gofton's motion confirming the action taken by the late president and secretary in contradicting the report. He said he thought never before in the annals of the Veterinary Medical Association had such a thing occurred—that a visitor had reported the proceedings in the lay press, and had taken the opportunity of deliberately and intentionally mis-stating plain facts. The report went so for as to say that "Prof. Bowhill, the Rupert of the debate, rose to the occasion." What did he say? Simply nothing, except that he had found a few microbes which he presumed were the organisms which produced a certain condition of lung tissue, but which bacteriologists had no hesitation in saying were simply putrefactive germs. He thought it a monstrous thing that a member of the

profession, and a visitor, should have put in such a garbled account of what took place.

The motion was carried unanimously.

Mr. A. HUNTER, the late president, thanked the meeting for passing the resolution.

Mr. D. DUDGEON proposed that a copy of the resolution be sent to the editor of the *North British Agriculturist*, and that he be asked to publish it.

Mr. A. HUNTER seconded the motion, and it was carried.

Mr. MOORE read a letter from Mr. C. Hunting relative to the peculiar case of a horse which he was to view in the yard of the hotel. The letter gave the following :—

History of the Case.

Mr. Parkinson bought this horse some two years since, and drove him for a year at least before anything was wrong with the eye or face.

The first thing noticed was an enlargement immediately below the inferior eye-lid, not much larger than a bean, after some weeks or months it enlarged to the size of a hen's egg and many other "nodules" or enlargements developed all over that side of the face, down to the angle of the mouth and involving part of the lower lip. Some were only the size of a bean, others 2 or 3 inches in diameter, and had the appearance of spreading from the centre to the circumference, and running into each other; a few were loose under the skin, but most of the swollen parts appeared to adhere firmly to the bones of the face.

When I first saw the horse, some 34 different enlargements were visible. No symptoms of disease of the lachrymal duct was visible, and no discharge of tears down the face, no excoriation of surface in any part, neither was there any thickening or enlargement of inner side of cheek, or of the nasal opening ; and so far as I could learn of the history of the case, there never had been any discharge of tears down the face.

The animal always ate his food readily and apparently without the slightest difficulty, and in no way did the disease seem to affect the horse otherwise than the very unsightly appearance of the face.

Mr. NESBITT said he saw the case at the last quarterly meeting, and he had seen it that day. He thought it was worse this time. He thought it was a case of melanosis. Mr. Hunting promised to operate on the animal, and send one of the tumours to Prof. McFadyean. As far as he could see, the only form of treatment would be to excise all the little bits of tumours and use caustic appliances.

Mr. W. HUNTING said some enquiring individuals had just opened two of the places where they thought they would find some fluid, and they were surprised to find nothing of the sort. There was a sort of straw-coloured mass inside. There was not a trace of melanosis in them. The tumour seemed to follow the course of the lymphatics, which suggested a specific disease.

PRESIDENTIAL ADDRESS.—Mr. G. R. DUDGEON.

Gentlemen,—My first duty is to thank you for unanimously electing me President of this Association. When I look over the list of gentlemen who have occupied this responsible position, it is with considerable qualms I enter upon my task, and I feel that however anxious I may be to do credit to the office I will in every way fall short of my predecessors. However, you have elected me, I have accepted office. It remains for you to put up with my many imperfections, and for me to do the best I can to uphold the dignity of the office with credit to you, and with as little discredit as possible to myself. If I fail you must put it down to want of ability, and not to want of will. I

yield to no one in the desire to see our Association in a thoroughly prosperous condition.

It behoves me to be brief, as you no doubt are much more anxious to have the paper—a most important one—from my friend Mr. Hunting, than to listen to anything I have to say. Nevertheless, there are a few matters which I would like to touch upon. The first is that of the New Charter at present before the Privy Council. Every one of you will have received from the President of the Royal College of Veterinary Surgeons a draft of the said charter, and will see that it contains all the principal points the profession asked for. It is to the profession, not the Council, that this reform belongs. If I had not spoken by returning at the last election, the six gentlemen pledged to reform, I question very much whether a new charter would at present be before the Privy Council; although the profession then woke up from its lethargic condition. The credit for this is largely due to Mr. W. Hunting, Editor of *The Veterinary Record*, Mr. Mulvey, and a few more gentlemen. Without their aid in stirring up the dormant condition of all of us, I am very doubtful if the present stage of affairs would have been reached. The new charter is not yet law, but we can still further emphasize the voice of the profession by returning next May, at the election of Councilmen, six gentlemen pledged to reform—we have done it before and can do so again—if the gentlemen who then retire will not fully and distinctly state what their opinions are concerning all the most important points at present before the profession. It is our duty to return gentlemen who have stated what their opinions are, and who are in touch with the reformers. It has been shown the reformers are in the majority, and it is for the profession to rule the Council, and not the Council the profession.

I would like particularly to draw your attention to the importance of the next election of councilmen, and to note most carefully what the action of some of those who retire has been with regard to the new charter. No chance should be thrown away. If the charter is not law before the next election, our opponents should not have the option of saying "The profession is not fully decided, as is evident by returning men who have opposed the new charter." Let us show them that we want reform, and that reform we will have. I speak strongly; for I am convinced that if we throw the slightest chance away, advantage will be taken of it. The new charter may not be granted, and if not, the profession must, through the Council, do the reforms themselves.

The matriculation examination is a question which our Council seem to have some little difficulty in settling. In the draft of the new charter is the bye-law stating what has been done by the College. It seems doubtful—at least I gather so—whether their regulations are uniformly carried out, and whether they have the power to enforce them. Surely the Royal College of Veterinary Surgeons ought to say what standard of education they expect from a student entering the colleges, and to see that it is carried out. That every student entering the colleges should be proved to have a thoroughly sound education, must unquestionably be of advantage to the student himself and the profession at large, but the Council should bear in mind that our profession is anything but a lucrative one, and, whether we should demand the same educational abilities from our students as is required by the other professions, is a question which should have the gravest consideration. Members of other professions, directly they graduate, are admitted into Society; our members, no matter how gentlemanly they may be, have to wait until they make a name, or money, before Society, with a big S, admits them. Not that it matters very much, for to my mind the relieving of the sufferings of the poor dumb animals is on a par with that of the said to be higher profession. It is for us, by patience, perseverance, and thoroughly gentlemanly conduct, to show Society that we are fit to occupy a social position second to none.

The question of the final examination was discussed at the last Council

meeting. I think that it is hardly fair that a student at his practical should be asked questions which belong to the theoretical portion of his examination, but I will not enter into this, as the Council seem to have arrived at a fair conclusion.

I wish to allude to the unfortunate outbreak of Foot-and-Mouth Disease among Danish Cattle in the Metropolitan Cattle Market. One had almost begun to look upon foot-and-mouth disease as a thing of the past, but the "unexpected frequently happens." Yet we cannot do anything but admire the prompt way in which the Board of Agriculture acted. The market was closed at once, every animal in it slaughtered. The whole cargo of Danish animals traced and slaughtered. Telegrams dispatched to the Local Authorities asking if licenses had been granted for any cattle coming out of the Metropolitan area. It is a pity that other outbreaks have occurred, but the decisive way in which the Board are dealing with them, shows that they are fully alive to the importance of the outbreak. We know how highly contagious this disease is, and how easily the infection may be carried, but I am firmly of opinion the Board will leave no stone unturned to prevent its spread.

Now that I am referring to the Board of Agriculture, I would like to draw your attention to the marked decrease in the number of outbreaks of pleuro-pneumonia since the Board took this matter in hand. And further, I believe I am right in stating that in all the discussions which have taken place on the subject by our society, the majority of our members always said that the infected and contact animals should be slaughtered, Government paying compensation. Since this has become law, we see how well it has acted, I have not time to go into figures, but speaking off hand, the number of outbreaks have been reduced one half since the Board took it in hand. I venture to prophesy—if only the present system is carried out—it is but a question of time before we get rid of this terrible scourge. The farmer and cattle dealer—and it is they for whom the Government legislates—can do most to prevent the spread of this disease. If they would only give notice directly they suspect an animal, instead of letting the first one die and be buried, hiding others, and selling off what looks healthy, the Board would not have half the difficulty it has; further, all cattle dealers and owners of auction marts should be compelled to keep a register of animals passing through their hands, so that if the disease should break out, the animals could at once be traced. Some letters have recently appeared in "*The Veterinary Record*" with regard to certain Agricultural Societies having lectures delivered to their members by veterinary surgeons on animal diseases. And again, about chemists dispensing veterinary medicines, in fact, I noticed that one of our Journals recently reviewed a book on "Veterinary Counter Practice." Well, gentlemen, I question very much that these things do us any harm. In fact, I am rather inclined to look at it as a compliment. Evidently the chemists think we are getting of some importance, and must be "shot at" and the only way they can do it, is by under-selling us. If the gentlemen who give lectures on behalf of the Agricultural Societies treat their subjects on the same lines the doctors do in their lectures on "First Aid to the Injured, &c.," I cannot see that they can possibly do us any harm. "A little knowledge is a dangerous thing." In spite of the Chemists, Agricultural Societies' lectures, and the hundred and one wonderful medicines advertised to cure almost everything our domestic animals are liable to, we are no worse off than our friends the doctors. Look at the dozens and dozens of patent medicines advertised, and which the British Public swallow with a patient and most enduring faith worthy of a better cause. Yet the doctors still manage to live and, I was going to say, let the people die.

(To be continued.)

Army Veterinary Department.

THE following officers attended the Levée at Dublin Castle on February 16th:—Veterinary-Lieutenant-Colonel H. Thomson, Veterinary-Major J. Reilly, Veterinary-Captain S. Longhurst (presented by Colonel Viscount Downe), and Veterinary-Captain F. F. Crawford.

At the Drawing Room, on February 17th, Veterinary-Lieutenant-Colonel H. Thomson and Mrs. H. Thomson (presented by Viscountess Wolseley), Veterinary-Major J. Reilly, Veterinary-Captain S. Longhurst and Mrs. Longhurst (presented by Mrs. F. F. Crawford), and Veterinary-Captain F. F. Crawford.

The following attended the Levée on 8th March:—Veterinary-Lieutenant-Colonel H. Thomson, Veterinary-Major J. Reilly, and Veterinary-Captain F. F. Crawford.

At the Drawing Room on 9th March:—Veterinary-Lieutenant-Colonel and Mrs. H. Thomson, Veterinary-Major J. Reilly, and Veterinary-Captain and Mrs. F. F. Crawford.

Parliamentary Intelligence.

HOUSE OF COMMONS, *February 25th.*

THE COMMISSION ON TUBERCULOSIS.

In answer to Mr. Furness,

Mr. CHAPLIN said: I am informed that the Royal Commission on Tuberculosis held its last meeting on the 28th of January last; but I may observe that investigations are being carried on in addition to the taking of evidence at the meetings of the Commission. Minutes of the evidence given before the Commission have been printed for the use of the Commissioners, but the evidence has not been distributed to the public. I do not underestimate the interest with which the report of the Commission is awaited, but I am not in a position at present to state when their investigations are likely to be concluded.

THE VETERINARY DEPARTMENT.

Mr. LAWSON asked the President of the Board of Agriculture whether, having regard to the uncertainty of outbreaks of contagious disease requiring the vigilance of the Veterinary Department, he would take steps to obtain the whole time of the director and officers of the department.

Mr. CHAPLIN: I am informed by Professor Brown, the director of the veterinary branch of the department, over which I preside, that at the present moment he holds the positions of principal of the Royal Veterinary College and lecturer upon cattle pathology. Professor Brown has, however, resigned the lectureship, and his resignation will take effect at the end of the current term, but he proposes to retain the principalship of the college, without salary, although it is possible that some honorarium may be assigned to him. Notwithstanding the fact that Professor Brown has held the appointments referred to, it has always been recognised by him that his whole time is at the disposal of the Board. It has always been considered that Professor Brown's connection with the college has been of the greatest service to the department, inasmuch as it has enabled him to keep constantly in touch with the most recent scientific work. No other officer of the Veterinary Department holds any other salaried professional appointment, and in every case the officer's whole time is available for the work of the Board. During the recent outbreak the services of the veterinary staff have been constantly available, both in and out of office hours, every day.

Obituary.

The following deaths of members of the Royal College of Veterinary Surgeons have been reported :—

W. W. Bryer, Cheltenham,	graduated	1826
W. H. Caudwell, St. Neots,	„	1844
J. M. Goude, Hove, Brighton,	„	1846
H. Pitt, Spilsby, Lincolnshire,	„	1855
T. Coats, Brampton, Cumberland,	„	1867
J. B. Polding, Burnley,	„	1869
A. Clarke, Whithorn, Wigtonshire,	„	1877

Notes and News.

SUPPOSED INFLUENZA IN DOGS.—It is reported from various parts of Saxony, that many dogs have been attacked of late by influenza. The symptoms are said to be complete loss of appetite, aversion to water, inclination to bite, and watery eyes. The disease is also stated to be epidemic, and death is not infrequent.

RABIES IN BERLIN.—After a long period of freedom from the disease, a case of rabies in a dog has occurred in Berlin, and immediately the most stringent regulations were issued by the police. From the end of February up to May 20th, every dog has to be led by a cord, and to be provided with a secure muzzle as well. Any dog found loose in the open air is to be immediately destroyed.

HORSE-SHOES AND SUPERSTITIOUS NOTIONS.—Lunaria, or moon-fern was, in old times, believed to possess such a singular affinity for iron, that it is often mentioned as drawing the shoes from the feet of horses grazing in fields where it grew. Culpepper, the famous herbalist, tells of a troop of Cromwell's horse, under the command of the Earl of Essex, who lost all their shoes from this cause while passing over a Devonshire moor. In Sylvester's translation of Du Barta's poems, this supposed dangerous property of moon-fern is likewise alluded to. In grubbing up old stumps of ash-trees, from which many successive trees have sprung, in the parish of Scotton, there was found, in many instances, an iron horse-shoe. One shown measured 4½ inches by 4⅓ inches. The workmen seemed to be familiar with this fact, and gave the following account :—The shoe is placed to "charm" the tree, so that a twig of it might be used in curing cattle over which a shrew-mouse had run, or which had been "overlooked." If they were stroked by one of these twigs, the disease would be charmed away.

VETERINARY SCHOOLS IN FRANCE.—The *Journal Officiel* of January 30th, announces that after October next, the National Veterinary Schools will only receive external students *(élèves externes)*. The students who now reside in the schools will continue to do so during their period of study.

The budget has been fixed for these schools and the epizoöty service for 1892, as follows :—

Personnel of the Veterinary Schools	425,000 francs
Material of the Veterinary Schools	560,000 „
Epizoöty service	277,800 „
Compensation for slaughter of animals	300,000 „

These allowances are the same as for 1891.

THE VETERINARY SCHOOLS IN SPAIN.—A decree of the Queen Regent of Spain, dated December 28, 1891, initiates great alterations in the teaching of

veterinary medicine in that country. Hitherto, there have been five schools—a superior one at Madrid, at which the students studied for five years and graduated with the diploma of "Veterinary Professor," and four secondary schools (at Cordova, Leon, Santiago, Saragossa) where the attendance is for four years. In 1890, another school was established at Cuba. The new decree suppresses three of the Peninsular schools and that in Cuba, leaving only two, one of which is to be at Aranjuez—province of Madrid, and the other at Tablada, province of Seville. These are to be designated "Escuelas de Medicina Zoologica." The teaching staffs of the three suppressed schools will be equally distributed in the two new ones. The period of study is to be for five years, at the end of which time the student will receive the diploma of "Medico-Zootecnista." The staff of each school will comprise twelve professors, six auxiliary professors, and four adjutant professors—all of whom will have the same prerogatives as those of the faculties. The excess of the present *personnel* will be utilised as vacancies occur. Hitherto, also, the general education requirements for admission included reading, writing, arithmetic, algebra, and geometry; but for the future the candidates must produce a certificate of proficiency from a secondary official school, in Latin, Castillan, geography, French, arithmetic, algebra, geometry and trigonometry. The change is to take place in 1892–93.

Swine Disease in South Australia.—A few months ago a disease appeared among the swine in the Geelong district and raged so violently that in about a couple of weeks over 100 pigs died. The piggeries were quarantined, and the veterinarian for the district was engaged to make an investigation. The disease disappeared as quickly as it broke out, and was lost sight of by the time he had made his enquiry. In the report it is stated that the disease was an entirely new one, approaching more nearly to diphtheria than anything else, and it was surmised that it arose from the presence of an atmospheric wave highly charged with microbes, the origin of which had not been ascertained. The epizootic was most virulent at its outbreak, when the pigs died very soon; those attacked later lingered some days, and the last to be effected were able to resist it, the explanation being that the virus had become attenuated.

Glanders in California.—Owing to the supposed existence of glanders in California, the New South Wales Government has prohibited, for a period of twelve months from January 15th, the importation or introduction of any stock, or any fodder or fittings put on board any vessel with, or for the use of, any stock from California.

Berlin Veterinary School.—Professor Dieckerhoff has been appointed Rector of this school for the triennial period of 1892-95. The budget of the Minister of Agriculture includes a grant to establish a special chair for consultation or polyclinic. For a long period the polyclinic has existed as an autonomous service, but it was entrusted to a subordinate. The number of professors is now increased from nine to ten. In addition, a professor from the Superior School of Agriculture gives instruction to the veterinary students in cattle, sheep and pig-breeding and management. The extraordinary budget provides a sum of 158,000 marks (£7,900) for the construction and alteration of certain parts of the school.

The Microbe of Vaccinia.—The *Revue Scientifique* announces that a Russian physician has discovered and succeeded in cultivating the microbe of vaccinia. The artificial virus thus obtained is quite as efficacious as that procured from the calf, while of course it has the precious advantage of being absolutely exempt from tuberculous or other germs.

Dresden Veterinary School.—At this school the students are instructed in meat inspection by a veterinary surgeon from the abattoir, while the

ambulatory clinic is directed by a district veterinary surgeon. These two officers act as auxiliary teachers of the school.

RABIES IN IRELAND.—Rabies has appeared in the kennels of the Armagh Harriers, and a number of them has been destroyed. The whole pack will probably have to be exterminated.

VETERINARY SURGEONS IN SWEDEN.—We learn from the Swedish newspapers that the thirty-two county veterinary surgeons in Sweden, who are paid by the Government, have petitioned the King of Sweden to grant them increased pay. The authorities to whom the matter has been referred seem to have treated the petition favourably. It is urged that the development of veterinary surgery during the last decade necessitates increased studies and expense in the purchase of books, surgical instruments, &c.; and a country like Sweden, which exports such a large number of cattle, sheep, and pigs, as well as dairy produce, must have veterinary surgeons of the highest and most modern qualifications.

Correspondence.

REGISTERED PRACTITIONERS.

DEAR SIR,—In Vol. xxxiii., page 470, of the VETERINARY JOURNAL, you will probably remember I asked the question, "Can existing practitioners of veterinary surgery be prevented from using the letters E.P.V.S. on their labels, bill-heads, &c.?" But up to the present no one has ventured to answer it. I am now in a position to give your readers the answer myself.

To test the point at issue, a newspaper was forwarded to our Registration Committee, in which the letters E.P.V.S. appeared after an existing practitioner's name, in answer to which the following was received: "Your complaint was duly laid before the Registration Committee at its last meeting, and I am directed to ask you to be good enough to furnish me with further evidence in the matter, when it shall be again brought before the Committee."

I then procured—with very great difficulty, however—an account with the letters E.P.V.S. on it, and forwarded it to the Committee, and after some little time the following answer was received: "Your complaint was duly laid before the Registration Committee at its last meeting, and I am directed to inform you that *they do not consider that Mr.——has infringed the Act.*"

I merely send this for publication, so that you and your readers may "know" as well as myself that existing practitioners may legally use the letters E.P.V.S. after their names.

This is another instance of our Act benefitting the uneducated class of practitioners far more than it has done those who have spent time, energy, and money to gain knowledge.—Yours truly,

"TRUTH."

[We doubt very much whether an existing practitioner can legally use the letters complained of. As they stand they appear meaningless. It should be remembered that before the Act was obtained anybody could call himself anything he liked—even M.R.C.V.S. with impunity. Now, no one dare designate himself by any name or title likely to mislead. No more existing practitioners can be registered, and their number is diminishing every year. In this alone the Act has conferred an immense benefit on thr profession.]

METHYLATED SPIRITS: COLLEGE ARMS.

DEAR SIR,—At the last Meeting of Council, I was directed to place myself in communication with the Board of Inland Revenue upon the subjects of the use of Methylated Spirits by Veterinary Surgeons, and their right to use the College Arms free of duty.

With regard to the first subject, I have had a considerable amount of negotiation, but am happy to say that the Board of Inland Revenue have now stated that they would be ready to consider favourably any application for the use of Methylated Spirits by Veterinary Surgeons in the preparation of cattle medicines, provided the formula satisfies the Board that the medicine is not capable of being taken internally by human beings. This, I have no doubt, will be at once considered by the Council, and, if necessary, referred to a Committee to arrange the formula asked for.

With regard to the use of the College Arms by members, the result of the negotiation is that members and officers of the College, as a matter of indulgence, will be allowed to use the College Arms free of duty in connection with professional matters.

I have the sanction of the President to communicate these matters to the professional Journals, as being the readiest means of acquainting the members of the profession with the results of the negotiations on subjects which, no doubt, are of interest to them. Will you kindly, therefore, be so good as to give this letter a place in your next issue?

GEO. THATCHER,
Solicitor to the R.C.V.S.

32, Essex Street, Strand, W.C.

A CORRECTION.

In the list of "New Members of the Profession," published in the JOURNAL for January, among those of the Glasgow Veterinary College was W. Packmann, Bury. The name should be spelt Packman. That gentleman passed the oral examination with "very great credit."

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from T. Goodall, Christchurch; Veterinary-Captain Nunn, Lahore; Dr. R. Sisley, London; F. C. Mahon, London; Veterinary-Lieut. L. J. Blenkinsop, Punjaub, India; F. Hobday. Royal Veterinary College, London; H. M. Phipson, Bombay; P. Moir, Edinburgh; Dr. Billings, Lincoln, Nebraska; E. Clark, London; J. B. Wolstenholme, Manchester; J. W. T. Moore, Newcastle-on-Tyne; R. C. Edwards, Chester; W. Packman, Hythe; L. D. Allman, London; Veterinary Lieut.-Col. Thomson, Dublin; H. G. Rogers, London; "Truth"; G. Thatcher, London; A. W. Hill, London; E. W. Hoare, Cork.

BOOKS AND PAMPHLETS: Sixth and Seventh Annual Reports of the U.S.A. Bureau of Animal Industry; Encyklopadie der Gesammten Thierheilkunde und Thierzucht; *J. Scherff*, Die Rationelle Pferdefütterung; Bulletin of the Johns Hopkins Hospital; *F. Huytra*, Jahresbericht uber das Veterinarwesen in Ungarn; *A. Degive*, Manuel de Marechalerie; Bulletin des Séances de la Soc. Nat. d'Agriculture de France.

JOURNALS, ETC.: *Journal of the Bombay Natural History Society; Bacteriological World; Revue Vétérinaire; Live Stock Journal; Baily's Magazine; Annales de Méd. Véterinaire; Proceedings of the Royal Geographical Society; Recueil de Méd. Vétérinaire; Œsterreich. Zeitschrift fur Wissensch. Veterinarkund; Revue Vétérinaire; Lancet; Mark Lane Express; Clinica Veterinaria; British Medical Journal; Echo Veterinaire; Edinburgh Medical Journal; Practitioner; Journal de Méd. Vétérinaire; Journal of the Royal United Service Institution; American Veterinary Review; Moderno Zooiatro; Thierarzt; Journal of Comparative Medicine and Veterinary Archives.*

NEWSPAPERS: *Baltimore American; York Herald; Eastern Counties Gazette; New York Herald.*